

# Instruction Manual



**SAWING PRODUCTS**

**ZV-3620**

**Serial No: 565-03101 to**

**Band Sawing Machine**

# DAMAGE CLAIM PROCEDURES

## VISIBLE DAMAGE AT THE TIME OF DELIVERY:

1. Note damage on carrier's delivery receipt. Accept the shipment. It can be returned later if repairs are not possible in the field.
2. Request a "damage inspection" from the delivery carrier:
  - a. The carrier will send his own people or contract an independent agency to make the inspection.
  - b. The inspector will request a signature on the report and leave a copy.
  - c. The carrier "damage inspection" report is not final. If additional damage is found when repairs are started, contact the carrier for another inspection; or at least give them the details of the damage.
3. Do not move the equipment from the receiving area and keep all shipping materials until carrier "damage inspection" report is complete.
4. If possible, take photographs of the damage and keep them for your files. Photos could possibly prove a claim at a later time.
5. Keep a record of all expenses and be sure they are documented.
6. Repair damage in the field whenever possible. Carriers encourage this to keep expenses down.
7. You have nine (9) months to file a claim.






## CONCEALED DAMAGE:

1. You have fourteen (14) days to report damage not noted at time of delivery.
  - a. Report damage as soon as possible. This makes it easier to prove that it did not happen at cosignee's plant.
  - b. Inspect machine(s) carefully before moving from the receiving area. Again, if machine is not moved, it is easier to prove your case.
2. Request a "damage inspection" from the delivery carrier:
  - a. The carrier will send his own people or contract an independent agency to make the inspection.
  - b. The inspector will request a signature on the report and leave a copy.
  - c. The carrier "damage inspection" report is not final. If additional damage is found when repairs are started, contact the carrier for another inspection; or at least give them the details of the damage.
3. Do not move the equipment from the receiving area and keep all shipping materials until carrier "damage inspection" report is complete.
4. If possible, take photographs of the damage and keep them for your files. Photos could possibly prove a claim at a later time.
5. Keep a record of all expenses and be sure they are documented.
6. Repair damage in the field whenever possible. Carriers encourage this to keep expenses down.
7. You have nine (9) months to file a claim.

# OPERATOR'S INSTRUCTION MANUAL

## METAL CUTTING BAND SAW

MODEL                      FIRST SERIAL NO.                      LAST SERIAL NO.  
 ZV-3620                      565-03101

<b>MACHINE MODEL</b> <input style="width: 90%;" type="text"/>		<b>SERIAL NUMBER</b> <input style="width: 90%;" type="text"/>
<b>TOTAL MACHINE ELECTRICAL POWER INPUT DATA</b>		
<b>VOLTAGE</b> <input style="width: 90%;" type="text"/> V	<b>PHASE</b> <input style="width: 90%;" type="text"/> 	<b>HERTZ</b> <input style="width: 90%;" type="text"/> ~
<b>FULL LOAD AMPS</b> <input style="width: 90%;" type="text"/> A		<b>OVERCURRENT PROTECTION PROVIDED AT MACHINE SUPPLY TERMINAL</b>
<b>LARGEST CONTROLLED MOTOR</b> <input style="width: 90%;" type="text"/>		
<b>FIELD ALIGN &amp; ADJUST SUMMARY</b> <input style="width: 90%;" type="text"/>	<b>BAND LENGTH</b> 	
<b>ELECTRICAL SCHEMATIC NUMBER</b> <input style="width: 90%;" type="text"/>	<b>DATE OF MANUFACTURE</b> <input style="width: 90%;" type="text"/>	
<b>HYDRAULIC SCHEMATIC NUMBER</b> <input style="width: 90%;" type="text"/>	 <b>SEE INSTRUCTION MANUAL FOR MACHINE OPERATION AND LUBRICATION DATA</b>	

For your information and future reference, pertinent data concerning your machine should be written in the spaces provided above. This information is stamped on a plate attached to your machine. Be sure to provide machine model and serial numbers with any correspondence or parts orders.

Specifications contained herein were in effect at the time this manual was approved for printing. The DoALL Company, whose policy is one of continuous improvement, reserves the right, however, to change specifications or design at any time without notice and without incurring obligations.

**PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATING THE MACHINE!**  
**For Sales, Parts and Service, call 1-888-362-5572**



**DoALL SAWING PRODUCTS**  
 2375B TOUHY AVENUE  
 ELK GROVE, ILLINOIS 60007 U.S.A.

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 DoALL, Dart, Tensigage and Zephyr.

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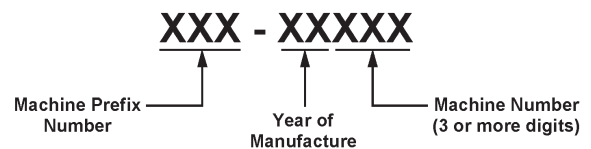
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How to read your serial number:

Example: 500-001234



# MACHINE DIMENSIONS

INCHES ( $\pm .03$ )  
MILLIMETERS ( $\pm 1$  mm)

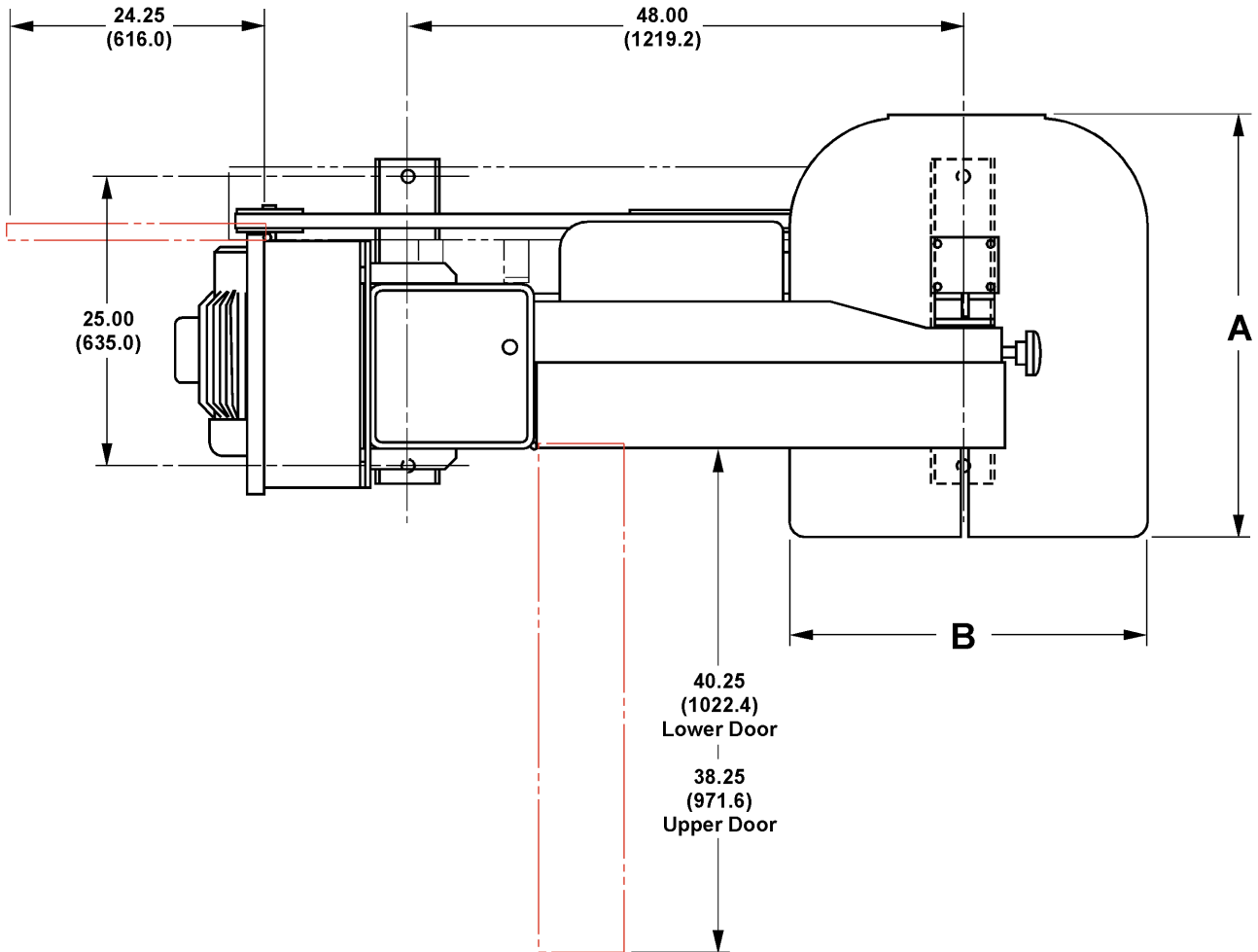
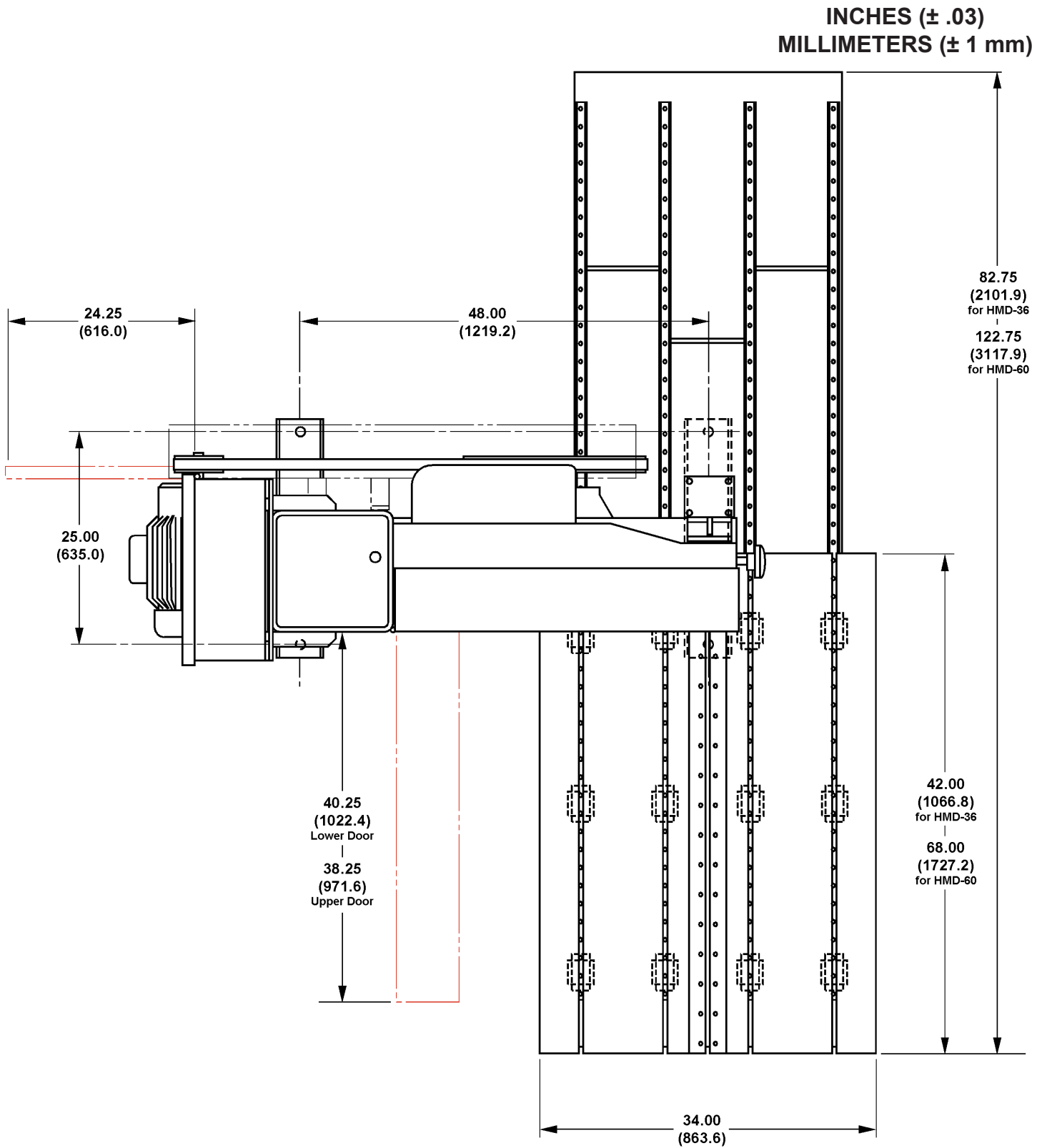


Table Dimensions			
	Standard Table	Glide Table	Hydraulic Table
A	36.25 (920.8)	32.63 (828.8)	41.00 (1041.4)
B	30.50 (774.7)	25.39 (644.9)	32.00 (812.8)

Optional

FLOOR PLAN

MACHINE DIMENSIONS (Continued....)

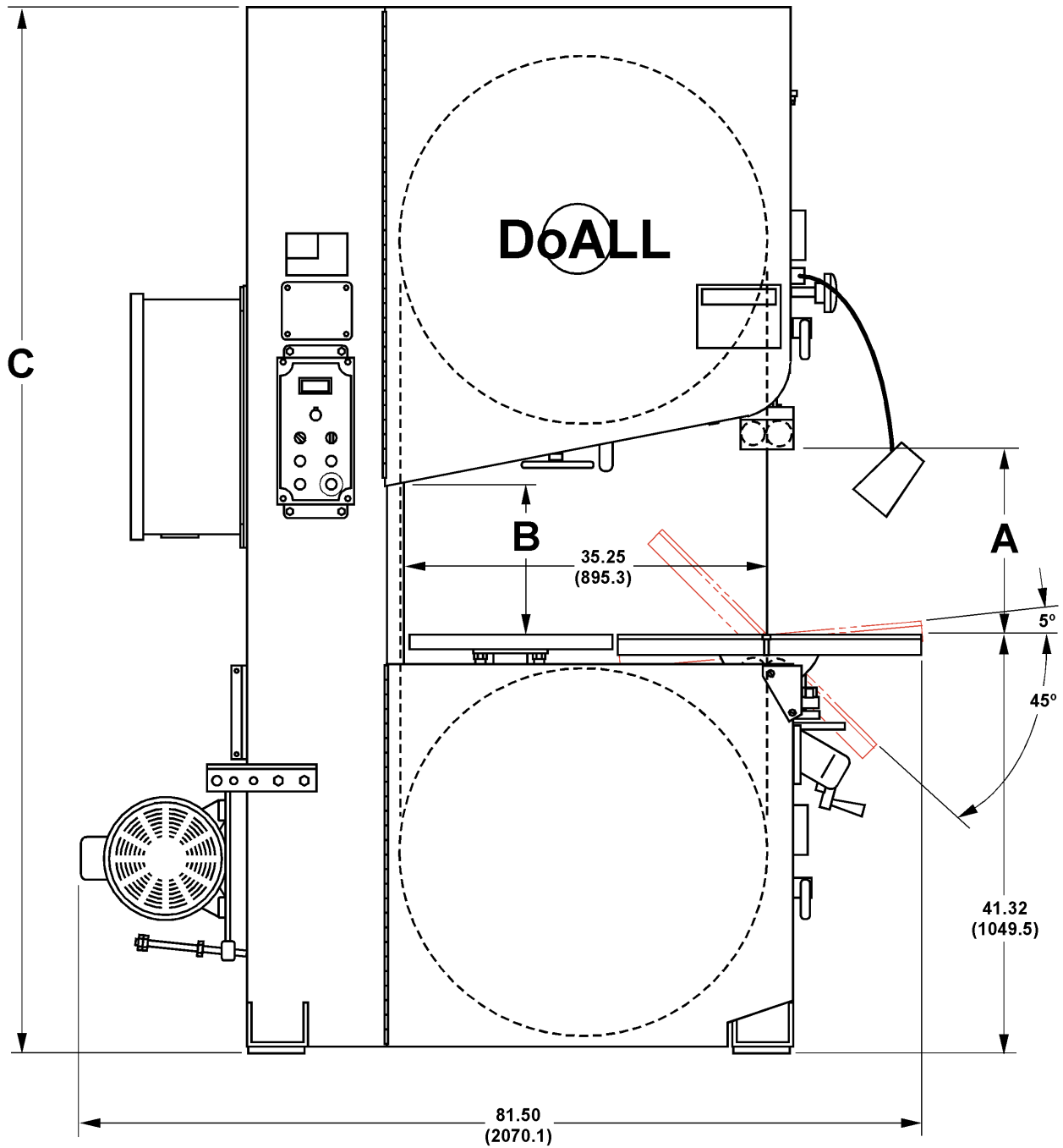


**FLOOR PLAN With HMD HYDRAULIC TABLE**

MACHINE DIMENSIONS (Continued...)

Dimensions			
	A	B	C
Work Height	20.00" (508.0)	15.50" (393.7)	103.25" (2622.6)
	30.00" (762.0)	25.50" (647.7)	113.25" (2876.6)
	36.00" (914.4)	31.50" (800.1)	119.25" (3029.0)
	42.00" (1066.8)	37.50" (952.5)	125.25" (3181.4)

INCHES (± .03)  
MILLIMETERS (± 1 mm)



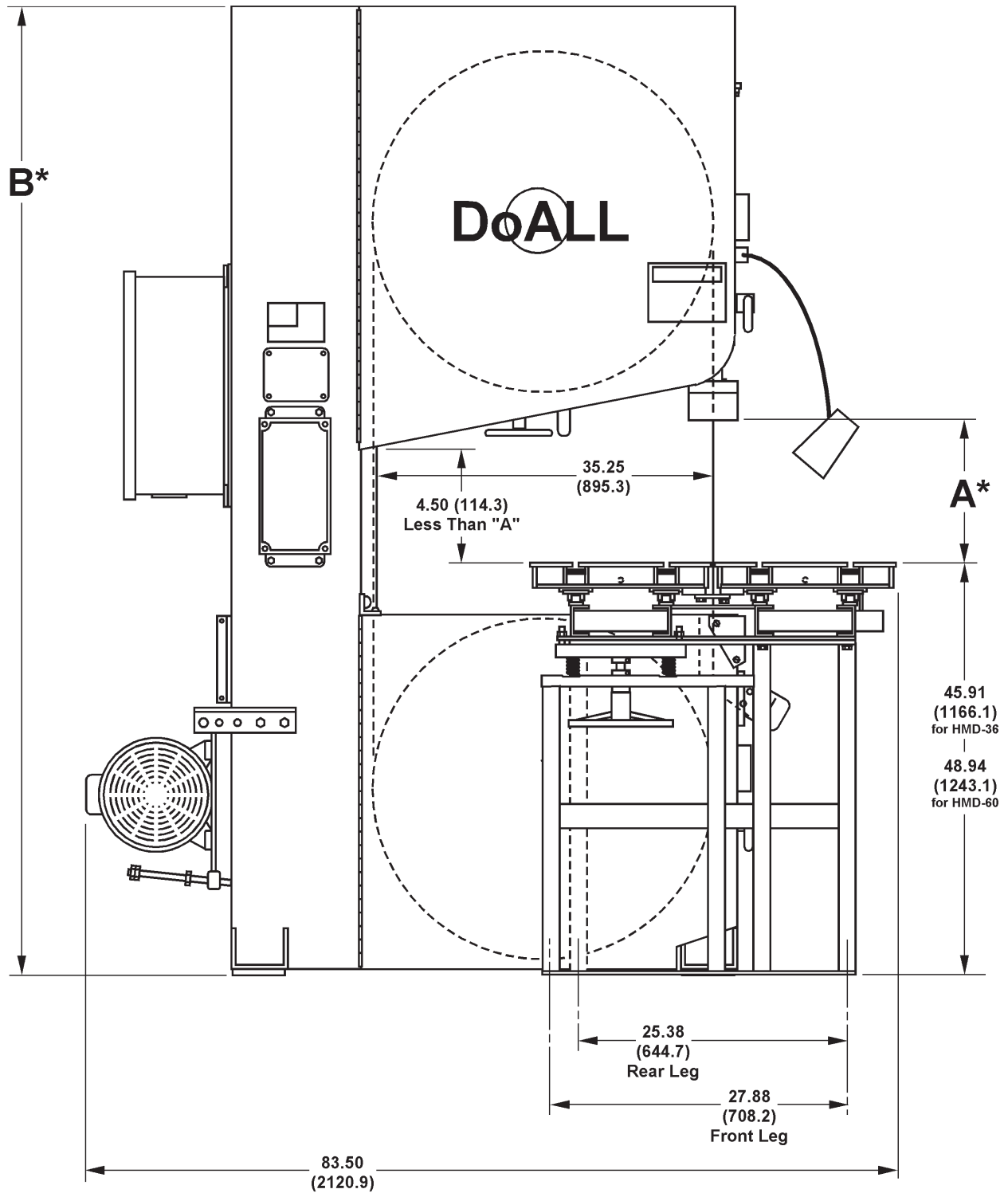
FRONT VIEW

MACHINE DIMENSIONS (Continued....)



\* "A" and "B" Is Dependent On Work Height Ordered.

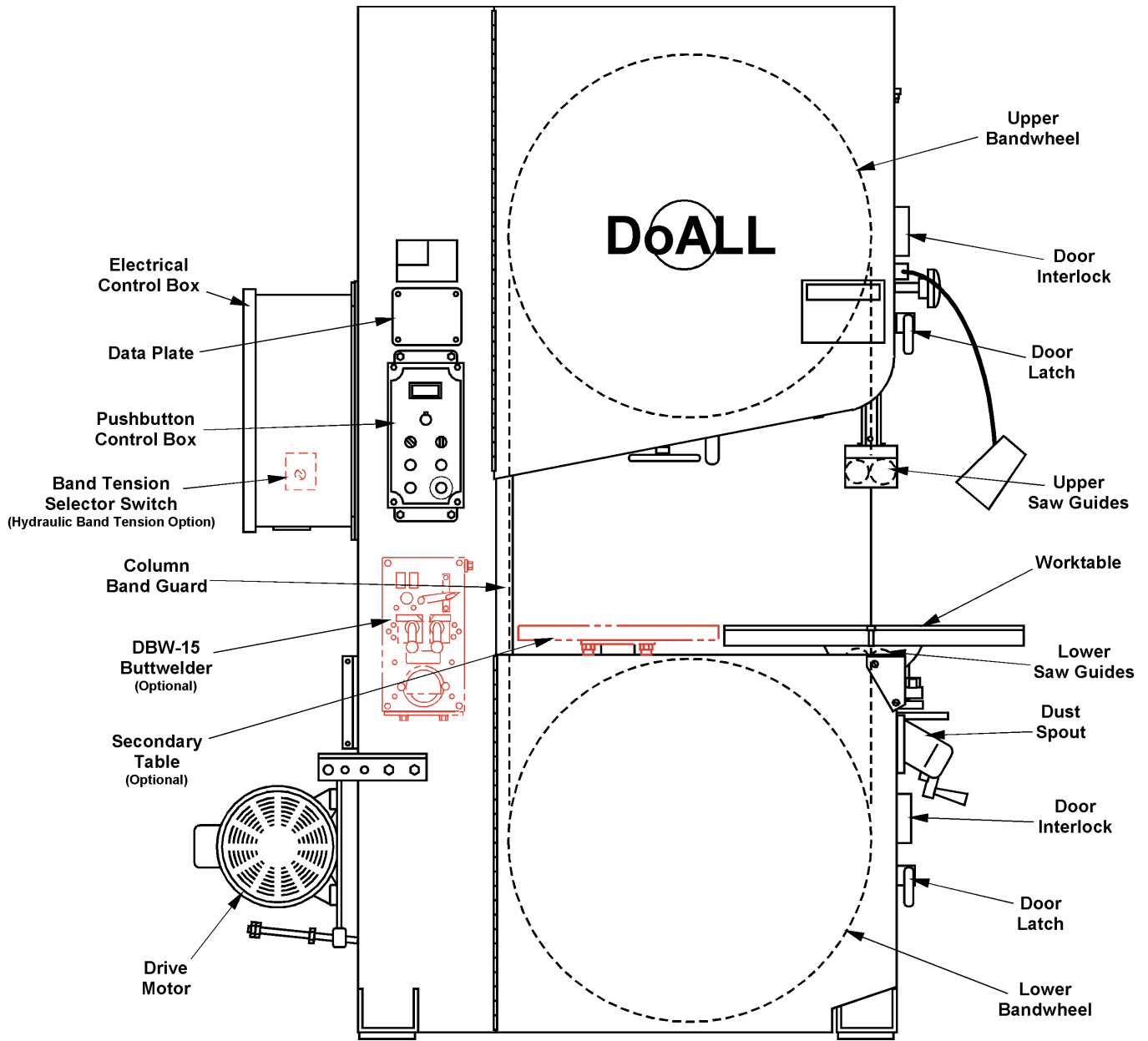
INCHES (± .03)  
MILLIMETERS (± 1 mm)



FRONT VIEW With HMD HYDRAULIC TABLE

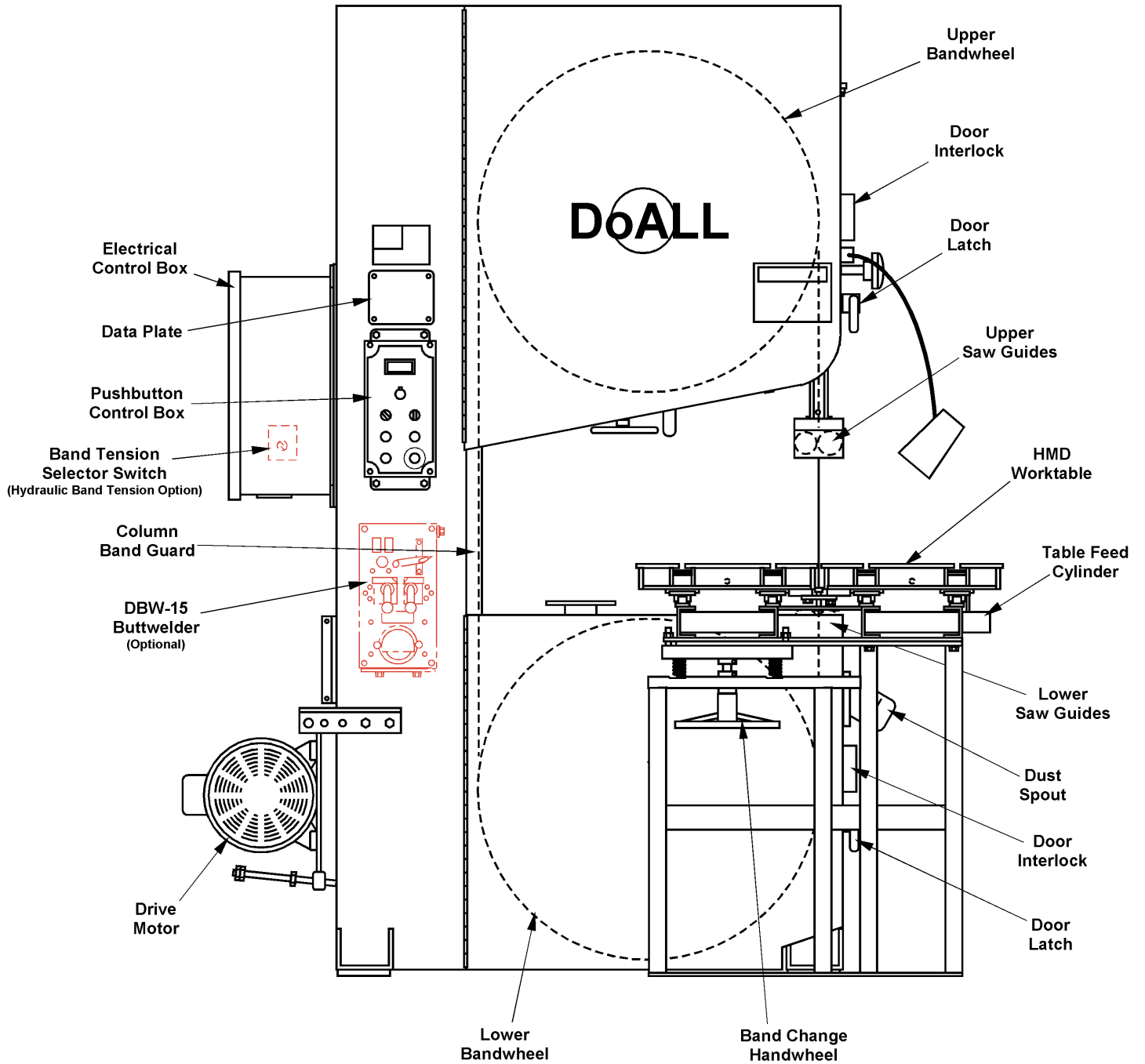


# MACHINE FEATURES



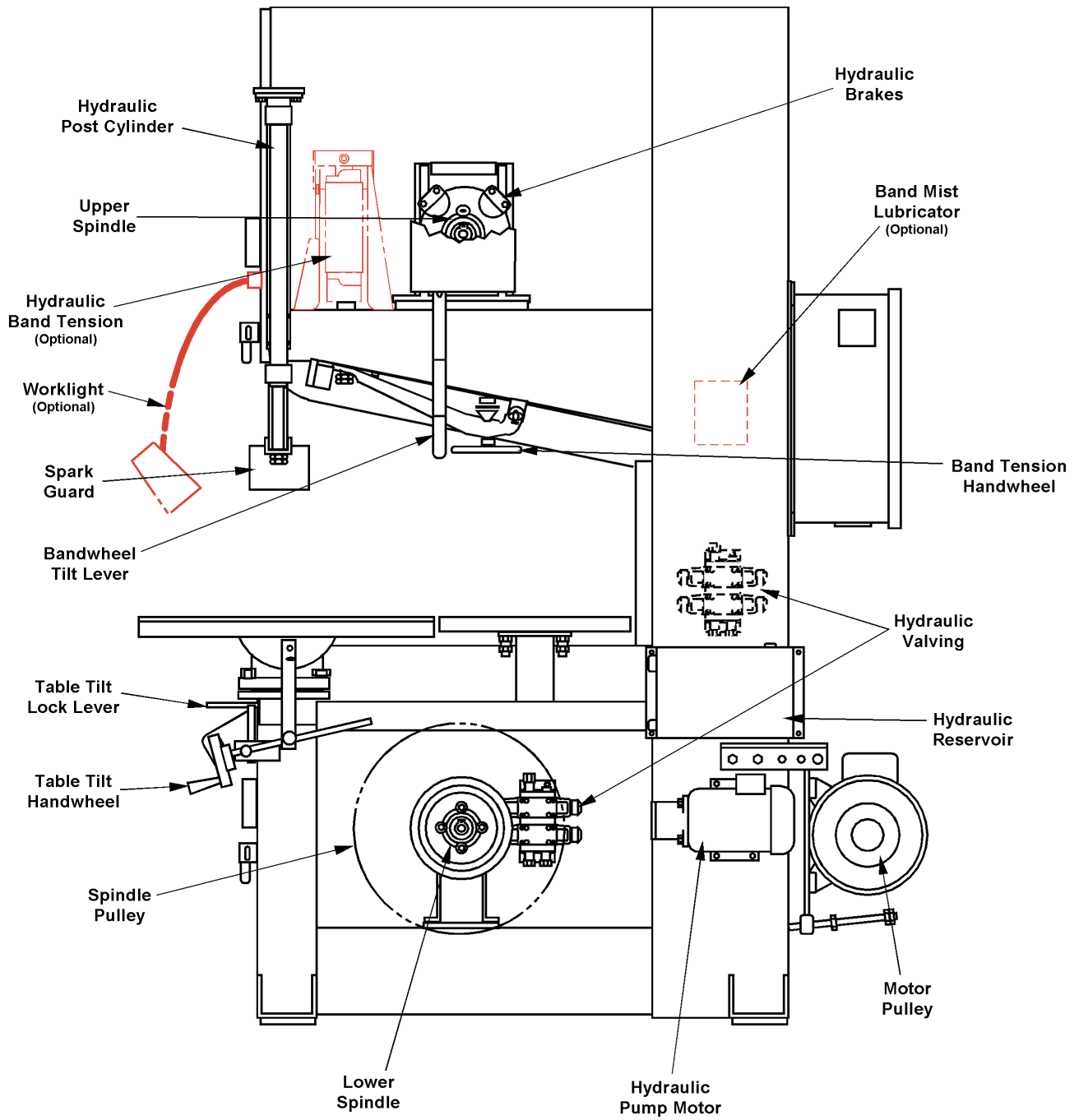
FRONT VIEW

MACHINE FEATURES (Continued...)



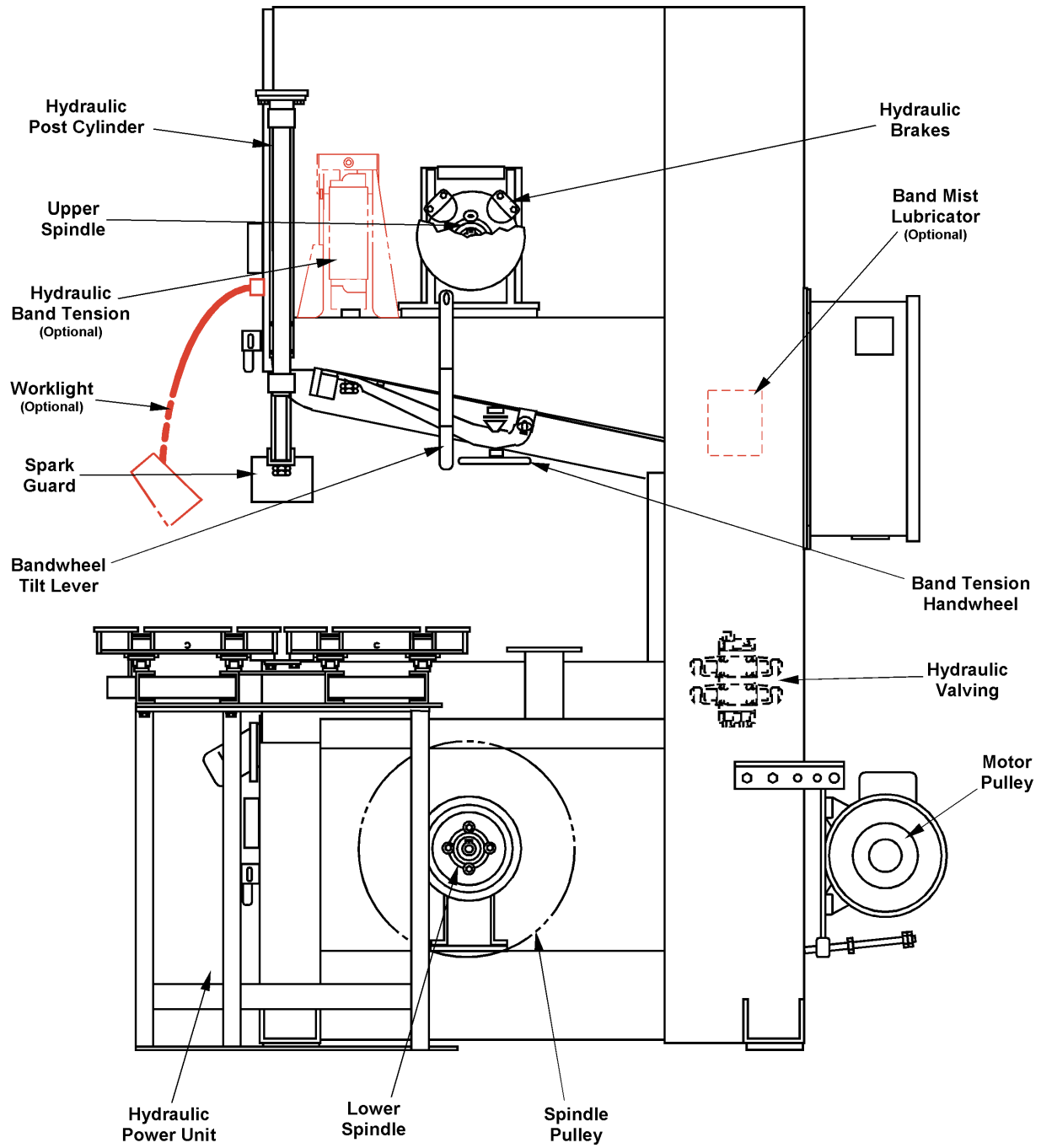
FRONT VIEW With HMD HYDRAULIC TABLE

MACHINE FEATURES (Continued...)



REAR VIEW

MACHINE FEATURES (Continued...)



REAR VIEW With HMD HYDRAULIC TABLE

# INSTALLATION



All the “left”, “right”, “front” and “rear” designations in this manual are as viewed by the operator facing the machine’s pushbutton controls.

## LOCATION

1. The floor area required for the standard machine is approximately 81.50 inches (2070.1 mm) in width by 36.25 inches (920.8 mm) in length. Machine height for the standard machine is 103.25 inches (2622.6 mm). Optional tables may require extra space. Refer to pages 1 thru 4 for further machine dimensions.
2. Locate the machine to provide adequate space for your sawing needs. Be sure also to provide sufficient clearance for: (a) Loading and unloading of stock; (b) All door openings; (c) Maintenance and lubrication procedures; (d) Plus any operation of any machine options, if applicable.

## OSHA NOTICE!!



**OSHA Regulation 1910.212 (5B).**  
Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

## UNPACKING

1. In most cases, the machine is fastened to and shipped on a wooden skid and shipped on its side.
2. If shipped on its side, tip the machine upright first before removing any other shipping materials.
3. Carefully remove all protective covers, strapping, hold-down brackets, crating, etc. Then: (a) Remove all bolts which fasten the machine to the shipping skid; (b) Check for other removable brackets, extra machine parts or supplies which might have been placed for shipment; (c) DO NOT remove the motor blocking until the machine is placed in desired position; (d) Inspect the machine and all parts for shipping damage. Claim procedures are listed on this manual’s inside front cover.

## CLEANING

1. If necessary, use solvent to remove any rust-preventive coating applied to exposed bare metal surfaces before shipment.

## LIFTING

1. A tapped hole is located on top of the machine’s column. Screw a forged 3/4-10NC eye-bolt into this hole for lifting purposes. An overhead hoist is recommended. The weight of the machine is approximately 3500 pounds (1587.6 kg).



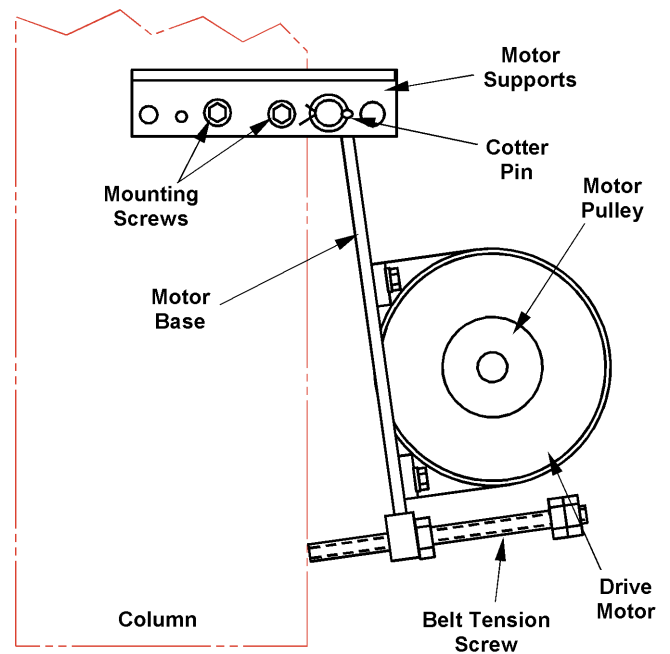
**DO NOT lift the machine by the sawing head.**

2. Lifting of the HMD hydraulic table can be done by a fork lift or overhead hoist. Distribute the weight evenly when lifting. Approximate weight of the table is 1500 pounds (680.4 kg).

## MACHINE INSTALLATION and ALIGNMENT

### Drive Motor Installation (When Machine Was Shipped On Its Side)

1. Install the two (2) motor supports. The supports have been correctly aligned and doweled at the factory. Then: (a) Slip in the motor base weldment into the supports and install cotter pins; (b) Place the belts around both motor and spindle pulleys; (c) Adjust the belt tension screw so very little deflection is noticed; (d) Install the belt guard to the machine frame.



*Drive Assembly.*



**DO NOT change the location of the motor or spindle pulley as they have been factory aligned.**

## ELECTRICAL INSTALLATION



**Electrical installation must be made by authorized electrical maintenance personnel only!**

1. Refer to the machine specifications plate on the machine frame to verify that the electrical supply circuit will meet the voltage/phase/frequency/amperage requirements listed. A basic data plate is reproduced on this manual's introductory page.
2. Bring the incoming power leads into the machine's electrical box enclosure. Refer to the electrical schematic if necessary when making the connections.

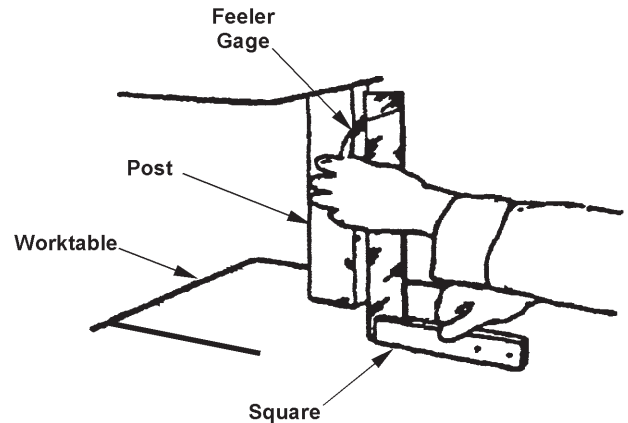


**Controls on the machine may vary. Some may not have a Band Stop control in which case the All Stop pushbutton is used.**

3. Turn the disconnect switch on the electrical box to "ON". Then: **(a)** Intermittently push the **Band Start** and **Band Stop** pushbuttons; **(b)** Check to make sure the saw band is moving in a downward direction between the saw guides; **(c)** Reverse the leads if saw band movement is incorrect.
4. The machine is provided with overload protection, however, the overload relay may kickout if starting and stopping occurs numerous times in rapid succession. If this happens, let the relay cool for a few minutes, then push the overload reset inside the control box enclosure before restarting the machine.

## TABLE ALIGNMENT (Standard)

1. Place the machine in desired location. Place a level on the machine table center. Insert leveling screws into the mounting pads and make final shimming adjustments to level the machine in both directions. Make sure weight bears evenly on all mounting pads. **DO NOT bolt the machine to the floor until all alignment and assembly procedures have been completed.**



*Squaring Worktable to Post.*

2. Place a good quality, 10 inch (254.0 mm) master square on the worktable against the post's back side. Measure clearance between the post and square near the bottom of the post. Clearance should be within 0.007-inch  $\pm$  0.005-inch (0.18 mm  $\pm$  0.13 mm) at the bottom of the post for standard machines.
3. Add or remove shims under the base pads until the correct post to square clearance is obtained.



**The machine must be bolted to the floor for worktable loads over 100 pounds (45 kg).**

## Hydraulic Installation (If Required)

1. Connect the hydraulic hoses from the power unit to the hydraulic valve manifold on the saw column or the hydraulic power unit. Hoses are numbered and tagged for correct installation. Referring to the hydraulic schematic will be helpful when making the connections.
2. The power unit must be used to check table travel with the saw band and raise the post.
3. If necessary, fill the hydraulic reservoir. The standard reservoir is located on the saw column. Machines with hydraulic options has a hydraulic power unit located either under the HMD table or behind the machine column.
  - Standard reservoir capacity is 2.8 gallons (10.6 liters) and ten (10) gallons (37.8 liters) for the typical hydraulic power unit. Both are filled with automatic transmission fluid.
4. Operate all the controls and check for correct operation. Let the hydraulic system run for several minutes to remove entrapped air.

## TABLE ALIGNMENT (HMD Table)

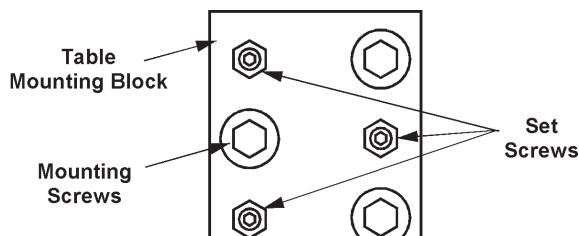
1. Place the machine in desired location. Place a level on the machine table base plate. Insert leveling screws into the mounting pads and make final shimming adjustments to level the machine in both directions. Make sure weight bears evenly on all mounting pads. **DO NOT bolt the machine to the floor until all alignment and assembly procedures have been completed.**
2. Remove the saw band according to the instructions in the "Operation" section in this manual. Then raise the saw guide post to its highest position.

### Hydraulic Installation (If Required)

1. Connect the hydraulic hoses from the power unit to the hydraulic power unit. Hoses are numbered and tagged for correct installation. Referring to the hydraulic schematic will be helpful when making the connections.
2. The power unit must be used to check table travel with the saw band and raise the post.
3. If necessary, fill the hydraulic reservoir. The reservoir is located either under the HMD table or behind the machine column.
  - Reservoir capacity is ten (10) gallons (37.8 liters) for the typical hydraulic power unit and filled with automatic transmission fluid.
4. Operate all the controls and check for correct operation. Let the hydraulic system run for several minutes to remove entrapped air.

### Table Positioning and Alignment

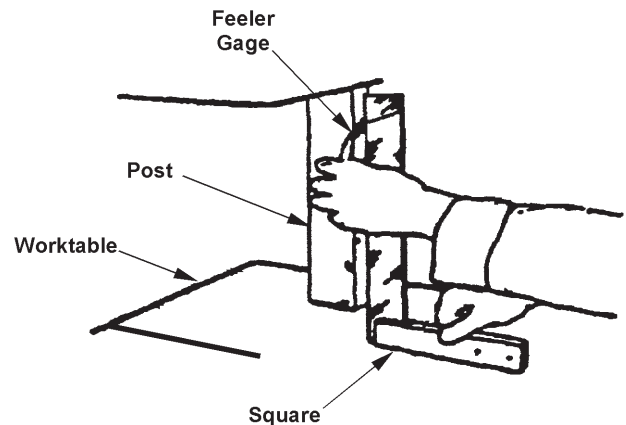
1. Position the HMD table onto the machine base making sure the table is setting firmly on the table base plate of the band saw. Loosely install hex. cap mounting screws to attach the table to the machine frame. **DO NOT TIGHTEN** at this time.



Typical Table Mounting Block.

2. Adjust the table leg leveling screws to roughly level and square the table to the saw.

3. Turn the disconnect switch to "ON". Then: (a) Push the **Hydraulic Start** pushbutton to activate the hydraulics; (b) Turn the **Post** selector switch to "UP" and raise the post to its highest position; (c) Move the table to the rear position by turning the **Table** selector switch to "REV" or; move the **Table Feed Control** to "REVERSE".
4. Reinstall the saw band. To do this you must lower the table support bar so a gap is created for the saw band can slip through.
5. Remove the table slot clamp bar at the edge of the saw band slot. Then turn the **Band Change Handwheel clockwise** (located under the forward section of the table) to lower the table support bar until the saw band can slip through the opening. Reinstall the table slot clamp bar and turn the handwheel back to its preset stop.
6. Reinstall the saw band according to the instructions in the "Operation" section of this manual.
7. After the saw band is installed and tensioned, position the table as such that the saw band tracks in the center of the slot. Adjust the leveling screws in the legs to stabilize the table.
8. Lower the post to just clear the table. Place a square of known accuracy on the table against the throat side of the post and check the post-to-table squareness. Post should be square to the table to 0.002 inch per inch (0.05 mm per 25 mm). Adjust the leveling screws in the legs.
9. Place a good quality ten (10) inch master square on the table against the backside of the saw guide post. Measure the clearance between the square and the post near the bottom of the post. Clearance should be within 0.007 ± 0.005 inch (0.18 ± 0.13 mm). Adjust the set screws in the table mounting pad.



Squaring Post to the Table.

## TABLE ALIGNMENT (HMD Table) (Continued....)

10. Add or remove shims under the base pads until the correct post to square clearance is obtained.
11. With an indicator mounted to the saw guide post, check table travel by positioning the indicator to read off of the T-slot in the table. Traverse the table through its full travel and adjust to achieve from 0 to .015 inch per 30 inches (0 to 0.38 mm per 762.0 mm) of travel.
12. When table and machine are in correct alignment and level, tighten the mounting screws and then tighten the jam nuts on the leveling bolts.

## PREPARATION FOR USE

1. Remove the pipe plug from on top of the upper spindle for venting purposes, **not** the two (2) from the side and bottom of the spindle.
2. Be sure the hydraulic reservoir is full. Refer to the Lubrication Chart for recommended fluid.
  - If necessary, replace the plug on top of the reservoir with the breather from the box of extra parts.
3. Shop air is required to operate the optional chip blower or band lubricator. Incoming air supply should be between 80 and 90 psi (5.6 and 6.3 kg/cm<sup>2</sup>).



**DO NOT exceed 90 psi (6.3 kg/cm<sup>2</sup>).**

4. Check the optional band mist lubricator unit for the proper reservoir level. Refer to the manufacturer supplied literature for reservoir capacity and recommended procedures.
5. Make sure all other points listed by the Lubrication Chart have been properly checked and/or serviced.



# OPERATION

## SAFETY PRECAUTIONS

# WARNING

TO AVOID POTENTIAL HAZARDS, OBSERVE THESE PRECAUTIONS WHEN OPERATING OR SERVICING THIS MACHINE-OPERATOR MUST:

- READ INSTRUCTION MANUAL BEFORE OPERATING THIS MACHINE.
- WEAR SAFETY GLASSES.
- WEAR A HARD HAT.
- WEAR NOISE PROTECTION AS REQUIRED BY O.S.H.A.
- WEAR GLOVES WHEN HANDLING SAW BAND AND WHILE FRICTION SAWING.
- SET SAW GUIDES AS CLOSE TO WORK AS POSSIBLE.
- USE A FIXTURE TO FEED WORK PIECE AND KEEP HANDS AWAY FROM MOVING SAW BAND.
- INSTALL SPARK SHIELD BEFORE FRICTION SAWING.
- CLOSE DOORS, REPLACE PANEL COVERS AND ALL SAFETY GUARDS BEFORE OPERATING MACHINE.
- USE DUST COLLECTOR OF SUFFICIENT CAPACITY CONNECTED TO THE MACHINE WHEN DRY SAWING.
- USE THE BAND ENGINEERED FOR THE JOB. USE FRICTION BAND WHEN FRICTION SAWING.
- STAND TO ONE SIDE AND AWAY FROM THE FRONT OF THE WELDER WHEN WELDING BLADE.
- DISCONNECT ELECTRICAL SUPPLY BEFORE REMOVING PANELS OR DRIVE COVERS.

MAKE SAFETY THE RULE AND FOLLOW SAFE SHOP PRACTICES.  
ALWAYS CONSULT THE OPERATOR'S MANUAL PRIOR TO SERVICING.

407047

Warning Label - READ and UNDERSTAND.

## FRICTION SAWING

1. The design of this machine makes it ideal for friction sawing. In friction sawing, momentary contact between the material being cut and the fast moving saw band produces enough friction to heat the material to its softening point. As soon as it becomes soft, it is cut away by the saw band teeth. This method cuts many times faster than conventional methods and cuts many materials that can not be machined any other way.

2. Keep these important points in mind while friction sawing:



**Roller saw guides are required for friction sawing.**



**Attach the spark shield to the post is necessary for friction sawing. Coolant is not used.**



Thicker the workpiece, the faster the band speed required and heavier the feed force. For example, band speed should be at least 6000 fpm (1828.8 m/min.) for 1/4 inch (6.4 mm) thick carbon steel; 12,500 fpm (3810.0 m/min.) for one (1) inch (25.4 mm) thick material.

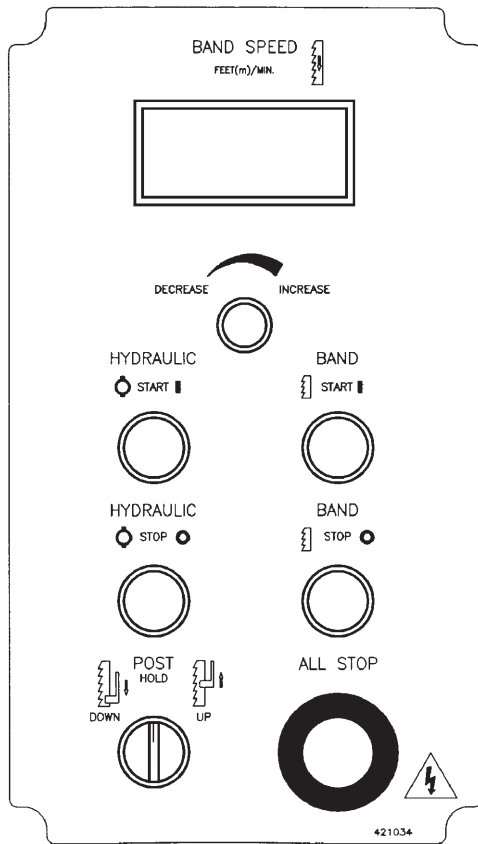
## MACHINE CONTROLS



Depending on options supplied (if any), some controls may not apply to your machine application.

1. **Band Speed Display.** This digital readout displays the band speed in feet per minute.
2. **Band Speed Control.** This control allows the operator to change the band speed. Turning the knob **clockwise** to "increase" the band speed; **counterclockwise** to "decrease" it.

## MACHINE CONTROLS (Continued....)



Typical Machine Controls.

3. **Hydraulic Start (Optional).** Pushing this illuminated green button starts the hydraulic pump motor for the optional band tension and/or hydraulic table.
4. **Hydraulic Stop (Optional).** Pushing this red button stops the hydraulic pump motor for the optional band tension and/or hydraulic table.
5. **Post.** When the operator turns and holds this selector switch to the "UP" or "DOWN" position, it allows the movement of the post. Releasing the selector switch springs to the "HOLD" position and stops the post in position.
6. **Band Start.** Pushing this illuminated green button starts the band drive.
7. **Band Stop.** Pushing this red button stops the band drive.
8. **All Stop (Emergency Stop).** Pushing this red mushroom head button stops the band drive motor. To resume operation, the **All Stop** button must be reset by rotating the head of the button **clockwise** until the head pops out.
9. The optional **Worklight** has its own "ON-OFF" switch on the lamp.

10. Controls for the optional **DBW-15 Buttwelder** are described in a separate instruction manual.

## TABLE CONTROLS (If Supplied)

1. **Feed Force.** This controls the force against the saw band. Force is indicated on a graduated dial around the control.

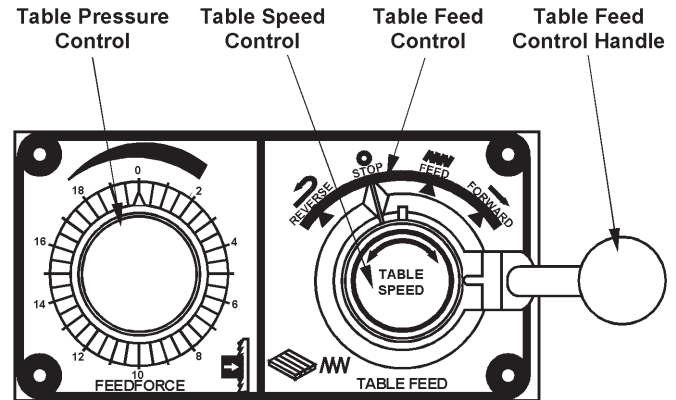


Table Controls.

2. **Table Feed.** This control with "REVERSE", "STOP", "FEED", and "FORWARD" settings controls table movement in either direction.
  - The "REVERSE" setting moves the table away from the saw band at a rapid traverse speed.
  - The "STOP" setting stops all table movement.
  - The "FEED" setting is for sawing and used in conjunction with the **Table Speed Control**.
  - The "FORWARD" setting moves the table toward the saw band at a rapid traverse speed.



**The "FORWARD" setting is NOT used for cutting stock.**

3. **Table Speed Control.** When the **Table Feed Control** is at the "FEED" setting, the table speed can be regulated by turning the center knob **clockwise** to increase table speed, **counterclockwise** to decrease it. Forward speed range is approximately 0 to 8 fpm (0 to 2.4 m/min.); feed rate is approximately 0 to 18 ipm (457.2 mm/min.).
4. **Table.** Some machines may have a selector switch with "REV", "HOLD" and "FWD" settings to control table movement.
  - (a) Turn the selector to "REV" (reverse) moves the table back and away from the saw band; (b) Turn the selector to "FWD" (forward) moves the table towards the teeth of the saw band; (c) Turning the selector to "HOLD" stop table movement in either direction.

## BAND SPEED CONTROL

1. Speed range can be infinitely varied with the **Band Speed** control. The speed is shown on an display located above the control.
2. Band speed is changed by turning the **Band Speed** control to the desired speed as indicated on the band speed display.
4. During machine operation, keep the following band speed precautions in mind:



**Adjust the band speed only while the machine is running.**



**Always turn the band speed control to “slow” before stopping the machine.**



**Always allow the saw band to stop completely before opening any bandwheel doors.**

## SAW BAND TENSION HANDWHEEL

1. Saw band tension is adjusted by turning the handwheel located below the machine’s sawing head.
2. A scale showing the recommended tension for various saw band widths is located to the right of the tension adjustment handwheel near the post. Scale numbers represent the recommended tensions for common saw band gages and pitches.



**Optional hydraulic band tension is factory set. DO NOT adjust the handwheel if supplied!**

## SAW BAND TRACKING LEVER

1. The upper bandwheel can be tilted a maximum of five (5) inches (127.0 mm) forward and backward to help obtain correct saw band tracking. This is done by the use of the bandwheel tilting lever located behind the band tension handwheel. A saw band is tracking properly when the saw band center follows the center of both crowned bandwheel tires.
2. The following tracking procedures are to be performed with the band drive motor "OFF": **(a)** Open both bandwheel doors; **(b)** Manually turn the bandwheels to observe how the saw band is tracking.
3. Move the bandwheel tilting lever to adjust the position of the bandwheel; to the left to track the saw band “IN”; to the right to track the saw band “OUT”.

4. The back edge of the saw band should just touch the back-up flange of the saw guide rollers, or the back-up bearings on insert type saw guides.
5. Close both bandwheel doors.

## SAW BAND PREPARATION



**Information about any DoALL saw bands and their applications can be obtained from a DoALL sales representative.**

### Saw Band Selection

1. The standard machine is equipped with a friction saw band that is 234 inches (5343.6 mm) long. It will accept saw band widths from 1/16 to one (1) inch (1.6 to 25.4 mm). Extra work height machines requires longer saw bands.
2. Optional saw guides that can be used:
  - One (1) set of double row, heavy duty ball bearing saw guide with rollers for one (1) inch (25.4 mm) wide saw band. Rollers for saw bands 1/4 to 3/4 inch (6.3 to 19.0 mm) are also available.
  - One (1) set of insert-type precision saw guide blocks with inserts for saw bands from 1/16 to 1/4 inch (1.6 to 6.3 mm) wide.

### Roller-Type Saw Guide Adjustment-Type III



**These instructions apply to both the upper and lower roller-type saw guide blocks.**

1. Select the saw guide blocks and rollers marked for the width of the saw band to be used. Then: **(a)** Place one (1) side roller and one (1) back-up roller in the upper saw guide block; **(b)** Switch the rollers around for the lower saw guide block; **(c)** Install the special adaptors onto the post and table cradle; **(d)** Then install the saw guide blocks on the adaptors.
2. After the saw guides are in place, the saw band should be in place and tensioned. See later in this section on installation and tensioning the saw band.
3. Loosen the clamp screws and bring the rollers up to the saw band, then tighten the screws. The rollers should be free enough to turn without moving the saw band.

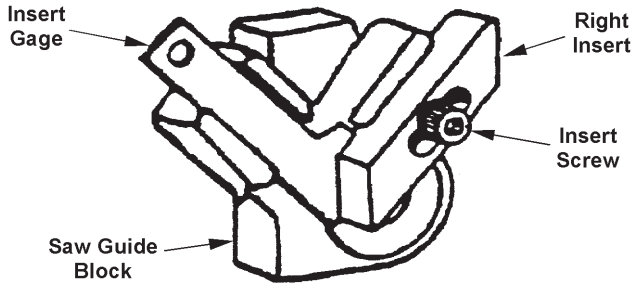
## SAW BAND PREPARATION (Continued...)

### Insert-Type Saw Guide Adjustment



These instructions apply to both the upper and lower insert-type saw guide blocks.

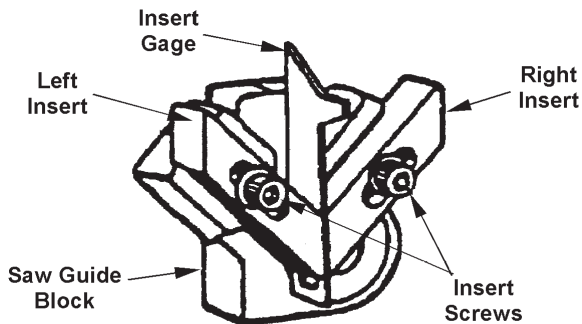
1. Select the saw guide blocks and inserts marked for the width of the saw band to be used. Then: **(a)** Place the right insert in the right milled slot; **(b)** Tighten the insert screw slightly so that the insert will slide in the slot, yet still hold its correct position when released.



Upper Saw Guide Block Shown

*Positioning the Right Insert.*

2. Select the insert gage which matches the size of the saw band being used. Then: **(a)** Place the insert gage in the left slot; **(b)** Adjust the right insert to fit exactly into the notched end of the gage; **(c)** Tighten the right insert screw.
3. Place the left insert in its slot and tighten the insert lightly. Then: **(a)** Place the gage edgewise between both inserts; **(b)** Lower the left insert until it rests against the gage; **(c)** Tighten the left insert screw.



Upper Saw Guide Block Shown

*Positioning the Left Insert.*

### Saw Band Removal



Always use extreme care when handling saw bands. Wear gloves.

1. Turn the band tension handwheel to release saw band tension. Then: **(a)** Open both bandwheel doors; **(b)** Open the post and the column saw band guards; **(c)** Loosen the knobs holding the worktable's sawing slot filler plate and remove it.
2. Carefully slip the worn or broken saw band from between the saw guides rollers or inserts and table slot and remove it from around both bandwheels.

### Saw Band Installation



Always use extreme care when handling saw bands. Wear gloves.

1. Remove the old saw band according to the directions above. Then: **(a)** Place the new saw band carefully (teeth facing down and to the front) through the table slot, around the bandwheels and between the upper and lower saw guide rollers or inserts; **(b)** The center of the saw band should track along the center of the bandwheel tires.
2. Remove the new saw band's protective Saw Cap. Then: **(a)** Apply the band tension recommended by the dial located on the front of the column; **(b)** Close the post and the column saw band guards; **(c)** Replace and secure the worktable's sawing slot filler plate.

### Saw Band Tension Adjustment

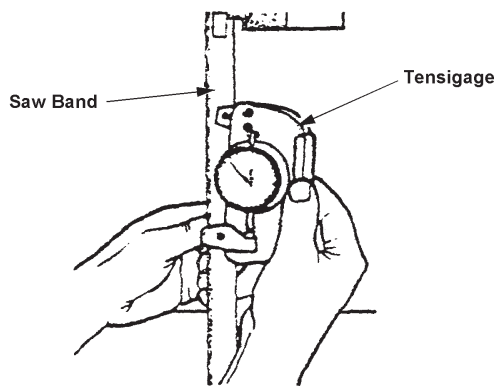
1. Saw band tension is adjusted by turning the handwheel located below the machine's sawing head.



Optional hydraulic band tension is factory set. DO NOT adjust the handwheel if supplied!

2. A scale showing the recommended tension for various saw band widths is located to the right of the tension adjustment handwheel near the post. Scale numbers represent the recommended tensions for common saw band gages and pitches.

## SAW BAND PREPARATION (Continued...)



Using the Tensigage.

3. A DoALL Tensigage can also be used to check the band tension. A reading of 2.2 units indicates correct band tension.
4. Tension may be checked “reading up” or “reading down”. **(a)** Fix the Tensigage to a slack saw band and apply tension to “read up”. **(b)** To “read down”, relax tension.
5. A new saw band will stretch as it being used. For this reason, it is advisable that the operator checks the band tension frequently.
6. The following are operator tensioning recommendations:
  - **Reduce** the recommended band tension when using saw bands with a coarser pitch or lighter gage.
  - **Increase** the recommended band tension when using heavier gage saw bands.

## POST ADJUSTMENT

1. Post elevation can be adjusted to accept workpieces under saw guides with heights varying up to the limits of the saw depending the work height capacity (standard capacity is 20 inches (508.0 mm)). The post is positioned with a selector switch located on the pushbutton control box on the front of the machine.
2. Always keep the post and upper saw guide as close as possible to the workpiece and the post band guard in place at all times when in operation.

## SPARK GUARD

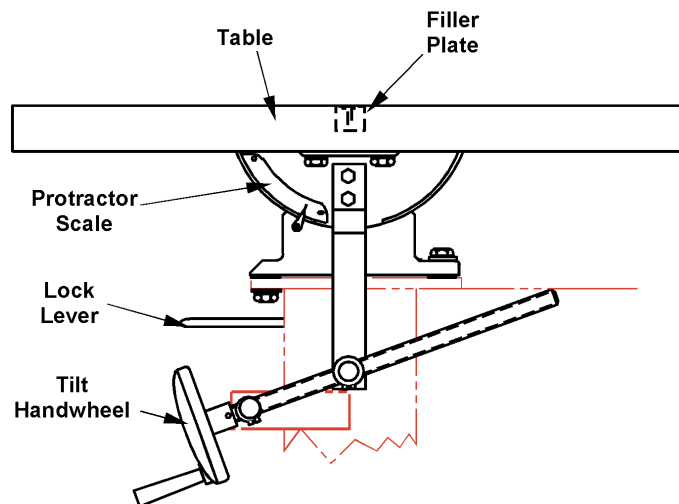
1. A spark guard is provided for protection from chips and sparks. It is installed over the saw guides and clamped to the place with a wing nut.

## WORKTABLES AND ADJUSTMENTS

1. The standard worktable measures 36.25 by 30.5 inches (920.7 by 774.7 mm). Its load capacity is 500 pounds (226.8 kg) evenly distributed with NO impact.



The machine must be bolted to the floor for table loads over 100 pounds (45.4 kg).



Standard Worktable.

2. The worktable can be tilted manually up to 5° left and 45° right primarily for sawing compound angles. The amount of worktable tilt is indicated by a pointer and a trunnion-mounted calibrated scale.
3. To tilt the worktable: **(a)** Move the table tilt locking lever located just above the locking handwheel to the left to loosen; **(b)** Turn the handwheel located under the table to desired angle as indicated on the scale; **(c)** Move the tilt locking lever to the right to tighten.
4. The worktable is drilled and tapped on the front side for attaching accessory equipment. Its removable table filler plate can be locked in place by two (2) knobs located under the table.

### Optional Secondary Table

1. The fixed worktable measures approximately 19.00 by 19.00 inches (482.6 by 482.6 mm) and used for support of large workpieces.

### Optional Hydraulic Table

1. Another optional hydraulic table measures 32 by 41 inches (812.8 by 1041.4 mm) with a table stroke of 16 inches (406.4 mm) and hydraulic actuated table tilt. See the “Accessories” section of this manual for operation of this table.

## WORKTABLES AND ADJUSTMENTS (Continued....)

### Optional HMD Hydraulic Worktable

1. The HMD-36 worktable measures 34.00 by 42.00 inches (863.6 mm by 1066.8 mm). Its load capacity is 1100 pounds (499.0 kg) evenly distributed with NO impact.
2. The HMD-60 worktable measures 34.00 by 68.00 inches (863.6 mm by 1727.2 mm). Its load capacity is 2200 pounds (998.0 kg) evenly distributed with NO impact.
3. Each table has two (2) replaceable wear plates on both sides of the saw band and four (4) T-slots for mounting various fixtures.

### DUST SPOUT

1. A dust spout is provided on the right side of machine frame just below the worktable. If desired, a dust collection unit can be attached to the spout.

### HYDRAULIC BRAKE

1. A disc type, hydraulic wheel brake operates automatically whenever the saw band should break.

### TYPICAL SAWING PROCEDURES

1. These procedures assume that the following machine conditions exist: **(a)** The machine has been properly installed and aligned; **(b)** The band drive motor is off; **(c)** The proper saw band has been installed, is correctly tracked and tensioned; **(d)** All lubrication procedures have been carried out.

#### Procedure

1. Raise the post high enough so that the upper saw guide can not be damaged while stock is being loaded onto the worktable.
2. Load stock to be cut onto the worktable. Clamp the stock if necessary.
3. If required, tilt the worktable to the desired angle and lock it in place.
4. Lower the post until the upper saw guide is just above the stock, but **NOT** touching.
5. Determine the desired band speed for the procedure to be undertaken. Then: **(a)** Push the **Band Start** button; **(b)** Turn the **Band Speed** control to the band speed desired.

6. Carefully move the stock toward the saw band and begin the cut. Adjust the band speed as necessary during the cutting procedure.
- For HMD hydraulic table: **(a)** Turn the **Feed Force** and **Table Speed** knobs to "0" or low settings; **(b)** Position the material to be cut to the starting point of the cut by moving the **Table Feed** control to "FORWARD" and turn the **Feed Force** knob until the table is in position; **(c)** Turn the **Table Feed** control to "FEED" and turn the **Table Speed** knob slowly to move the saw band into the workpiece.
7. After the cut has been finished: **(a)** Turn the **Band Speed** control to its lowest speed; **(b)** Push the **All Stop** pushbutton; **(c)** Remove the piece just cut from the worktable; **(d)** Reposition the stock to begin another cut; **(e)** Push the **Band Start** button and then set the band speed.
8. The following are important sawing precautions which should be observed:



**Reduce the feed force when cutting into an opening to prevent saw band damage.**



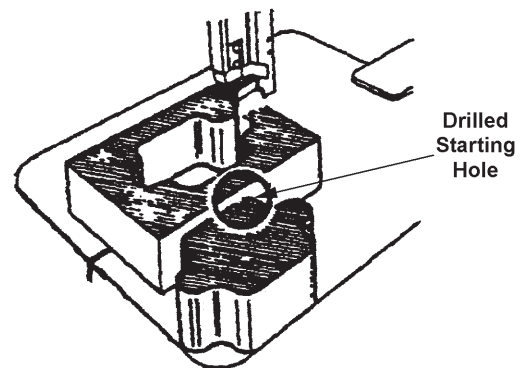
**DO NOT feed work so rapidly that the saw band twists or bows.**



**For future reference, keep a record of band speed, feed pressure, coolant application settings etc. for successful jobs.**

#### Contour Sawing (Does Not Apply to HMD Tables)

1. Procedures for stock set-up and band speed adjustment are the same as noted for production sawing except that: **(a)** Contour sawing of large, heavy stock will require the use of a heavy gage saw band; **(b)** The operator should consider using options that make the movement of stock easier for sawing intricate contours.



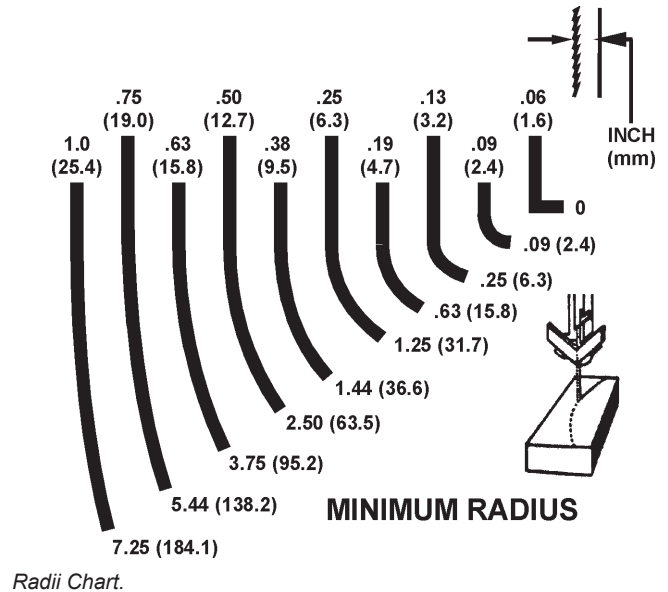
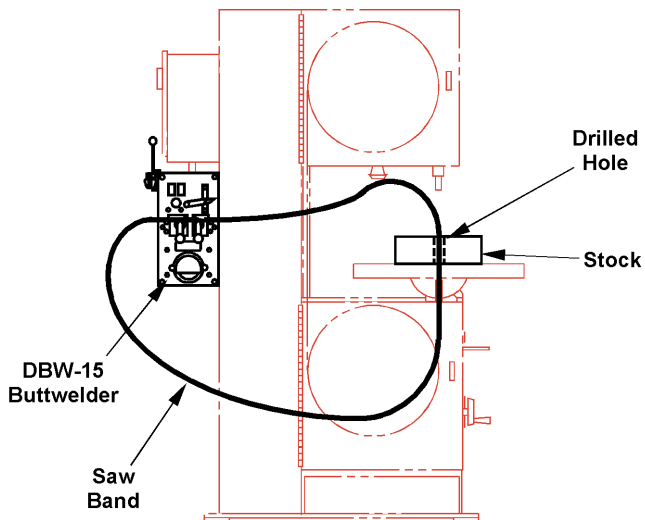
*Starting Hole for Sharp Contour Cutting.*

## TYPICAL SAWING PROCEDURES

(Continued....)

### Internal Contours

- To prepare for internal contour sawing: **(a)** Drill a starting hole in the stock; **(b)** Run the saw band through the hole; **(c)** Weld the saw band. **Insulate the saw band from contact with the stock or the worktable will insure a better weld.**



Typical Internal Contour Sawing.

- The diameter of the drilled starting hole is determined by the size of the saw band being used. A hole is usually drilled in the stockpiece when a sharp corner is to be cut, as shown in the illustration. However, a corner may also be by-passed by cutting a curve, and leaving the remainder to be notched out later. Use the widest possible saw band for cutting the curve.
- Attempting to cut too small a radius with too wide a saw band will cause binding, saw band breakage and/or excessive insert/roller wear.
- Radii chart recommendations are based on sawing relatively thin stock. Consider these variations: **(a)** Use a heavy gage saw band for heavy stock sawing; **(b)** Use a narrower than recommended saw band when sawing stock more than one (1) inch (25.4 mm) thick.

# LUBRICATION

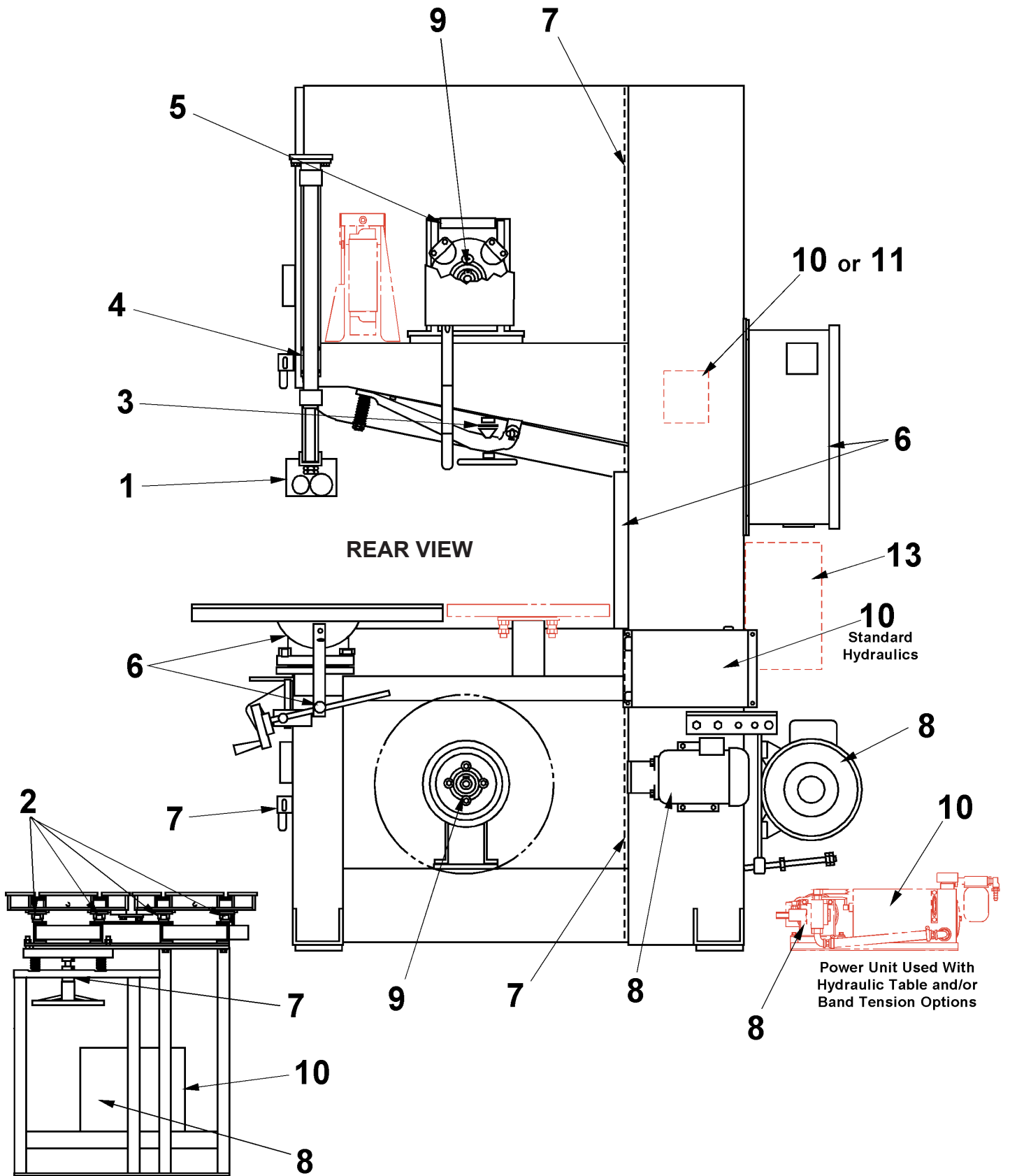
## LUBRICATION CHART

LUBRICATION POINT NO.	LOCATION DESCRIPTION AND SERVICE RECOMMENDATIONS	LUBRICATION INTERVAL *	RECOMMENDED LUBRICANT
1	<b>Roller saw guides (optional).</b> One (1) grease fitting on each roller.	DAILY	Premium quality, multi-purpose, lithium-based, EP (extreme pressure) grease.
2	<b>Linear Rail Bearings (HMD Hydraulic Tables Only).</b> Grease fittings. Quantity of: 8 for HMD-36; 12 for HMD-60.	MONTHLY	NLGI Grade No. 2. Union 76, UNOBA EP 2, or equivalent.
3	<b>Band Tension Screw and Bearing.</b> Clean and apply oil.	MONTHLY	High quality, rust and oxidation-inhibited, medium hydraulic and general purpose industrial oil. ISO-VG Grade 68 (Formerly ASTM Grade No. 315).
4	<b>Post.</b> Clean and apply oil.	MONTHLY	
5	<b>Upper Bandwheel Slide, Hinge, and Tilt Screw.</b> Clean and apply oil.	MONTHLY	
6	<b>Table Trunnion and Tilt Screw.</b> Apply oil to tilt surfaces and threads as required.	MONTHLY	
7	<b>Miscellaneous: Slides, Hinges, Pivot Points, Component Parts, Unpainted Surfaces, Optional Equipment as Supplied, etc.</b> Keep clean and apply oil as required to to maintain proper function, reduce wear, and corrosion, etc.	CHECK MONTHLY	
8	<b>Electric Motors.</b> Band Drive, Hydraulic System Pump.	Lubricate (if any) per manufacturer's recommendations.	
9	<b>Upper and Lower Spindle Bearings.</b> Proper oil level must be maintained.	CHECK WEEKLY	High quality #10 spindle oil. Mobil, Velocite #6, or equivalent.
10	<b>Hydraulic Reservoir (Standard).</b> 2.8 gallon (10.6 liter) capacity. Proper oil level must be maintained. Drain and refill after first month, every six (6) months thereafter. <b>Hydraulic Reservoir (for Hydraulic Table, HMD Table and/or Hydraulic Band Tension Options).</b> Ten (10) gallon (37.8 liter) capacity. Proper oil level must be maintained. Drain and refill after first month, every six (6) months thereafter.	CHECK WEEKLY	Multi-purpose automatic transmission fluid. General Motors Dexron III, or equivalent.
11	<b>Band Mist Lubricator (Optional).</b> Keep filled and hoses clear.	CHECK WEEKLY AS REQUIRED	Contact your DoALL sales representative for the best oils and/or fluids for your application. DoALL cutting fluids and/or oils (AL-2000).
12	<b>Oil-Mist Lubricator (For Optional Roller Saw Guides).</b> Keep filled and hoses clear.	CHECK WEEKLY AS REQUIRED	
13	<b>DBW-15 Buttwelder (Optional).</b>	Lubricate as required per DBW-15 Instruction Manual.	

\* Lubrication intervals are based on a 8-hour day, 40-hour week. Lubricate more often with heavier use.



**LUBRICATION DIAGRAM**

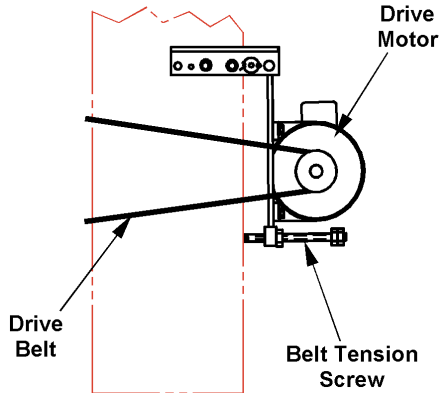


**HMD TABLE OPTION**

# MAINTENANCE

## CHANGING BELT

1. Belts on the spindle pulley and motor pulley will stretch during use. This stretch is taken up by tightening the belt tension screw located below the drive motor.
2. To replace the belts: **(a)** Turn the belt tension screw **counterclockwise** to relax belt tension; **(b)** Remove the old belts.



*Drive Components.*

3. Install the new belts around the spindle pulley and motor pulley. Then turn the belt tension screw **clockwise** to tighten belt so there is very little deflection of the belts at the midpoint between the pulleys.

## ELECTRIC MOTORS

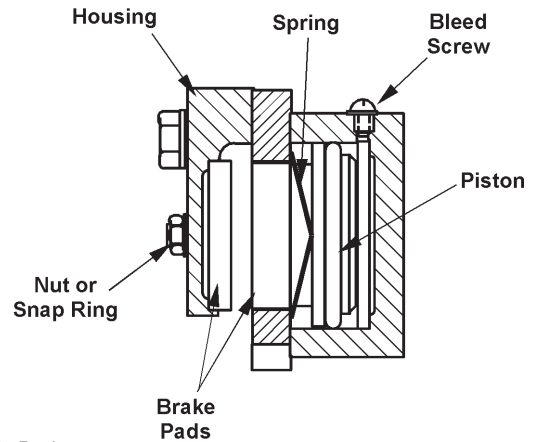
1. Follow the manufacturer's maintenance instructions for each electric motor.

## HEAD COMPONENTS

1. Wipe oil onto the post occasionally. Then move the post up and down through the slide block several times.
2. Oil the upper bandwheel slide and band tension screw each month.
3. Upper spindle bearings are sealed and lubricated for life.

## HYDRAULIC BRAKES

1. Inspect the brake pads occasionally and keep the pads clean. Do not allow hydraulic fluid to drip onto the brake pads.



*Hydraulic Brakes.*

2. To replace the brake pads: **(a)** Remove the housing; **(b)** Remove the nut and screw or snap ring holding the brake pad onto the housing; **(c)** Replace the brake pads and reinstall necessary hardware (pad on the piston side "floats" in the opening and is not attached); **(d)** Reinstall the housing.
3. Remove air in the brake lines by loosening the top screw on the brake cylinder until fluid appears. Repeat the procedure for all brake units.
4. Check the hydraulic reservoir for proper oil level, add if necessary. Drain, flush, and refill the reservoir after the first month, every six (6) months thereafter.

## HYDRAULIC SYSTEM

1. Keep the hydraulic reservoir filled at all times. Check the reservoir oil level daily by referring to the sight gage.
2. Drain, clean, refill the reservoir and change the fluid after the first month of operation; every six (6) months thereafter. Clean the suction strainer and keep hoses clear. Automatic transmission fluid is the recommended product.

### System Pressure

1. Hydraulic system pressure is correctly set at the factory and should not require adjustment for a considerable period of time. On hydraulic systems, correct system pressure varies between 200 and 300 psi (13.8 and 20.7 bar or 14.1 and 21.1 kg/cm<sup>2</sup>).

## HYDRAULIC SYSTEM (Continued....)

- To adjust system pressure: **(a)** Loosen the jam nut **counterclockwise** on the adjusting screw; **(b)** Start the hydraulic motor by pushing the **Hydraulic Start** button; **(c)** Looking at the pressure gauge, turn the adjusting screw **in (clockwise)** to increase pressure, **out (counterclockwise)** to decrease it.

### Pump Repair & Replacement

- DO NOT attempt to repair the hydraulic pump.** Return it to the factory for repair or replacement. Be sure to specify the correct pump model and serial numbers when returning the unit.



**After the pump has been primed, run it for several minutes while operating the machine's controls to purge entrapped air from the pump and system. Check for oil leaks while the system is being operated.**

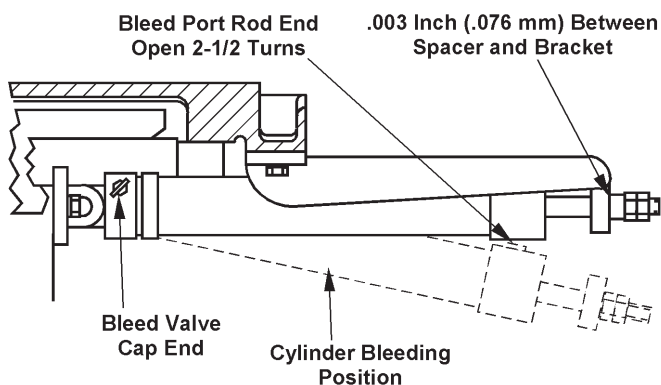
## HYDRAULIC TABLE (Optional)

### Bleeding Air From The System

- Run the machine for at least 30 minutes or until oil is warm. Then: **(a)** Position the adjustable table stops, located on the side of the table, to give full table travel; **(b)** Place the **Table Feed Control** in "FORWARD" to move the table cylinder rod to its extended position; **(c)** Remove the two (2) jam nuts and spacer shown in the illustration.



**Support the rod end of the table cylinder as the rod is pulled out of the table bracket.**



*Bleeding Air From the Hydraulic System.*

- Attach a length of plastic tubing to the bleed valve on the rod end of the cylinder and route it into the reservoir through the dip stick opening. Next: **(a)** Open the bleed valve on the cap end of the cylinder; **(b)** Move the **Table Feed Control** to "REVERSE" and retract the cylinder.



**Be certain to close the bleed port opposite the end you are bleeding.**

- Allow the cylinder to hang down to provide access to the bleed port on the top of the rod end cap. Then: **(a)** Close the bleed valve on the cap end of the cylinder; **(b)** With a container under the rod end of the cylinder, open the bleed port 2-1/2 turns **counterclockwise**; **(c)** Move the **Table Feed Control** in "FORWARD" to fully extend the cylinder rod; **(d)** Repeat steps 2 and 3 until all air is purged from the system.
- Reinstall the table cylinder rod with spacer and jam nuts, as shown in the illustration. Allow .003 inch (.076 mm) clearance between the spacer and the table bracket.
- See the "Adjustment Summary" for information on all hydraulic adjustment procedures.

## SAW GUIDES

### Pivot Back-Up Inserts

- Reverse pivot back-up inserts for additional wear life, then replace when all surfaces are worn.

### Roller Back-Up Bearings

- These bearings are sealed and packed for life with a special lubricant. They can be replaced by: **(a)** Removing the snap ring; **(b)** Pulling out the bearing and shaft; **(c)** New bearings are easily installed with a light press fit.

### Automatic Mist Lubricated (Optional)

- Keep reservoir full and hoses clear. Follow the manufacturer's maintenance instructions for the lubricator.

## MACHINE CLEANING

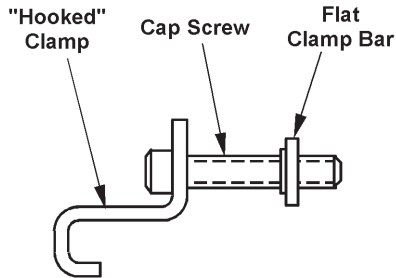


**Stop the machine when cleaning the machine or opening bandwheel doors or covers.**

- Keep the machine and its parts as clean as possible to prevent excessive wear and damage.
- Metal chips and other waste materials may collect around areas such as: saw guides, table surface, T-slots, bandwheels, slides, etc. Remove these materials as soon as possible. **The DoALL Company recommends removing chip collections at least twice per each eight (8) hour shift, and more often with heavier use.**

## BANDWHEEL TIRE REPLACEMENT (Sheet Metal Bandwheels)

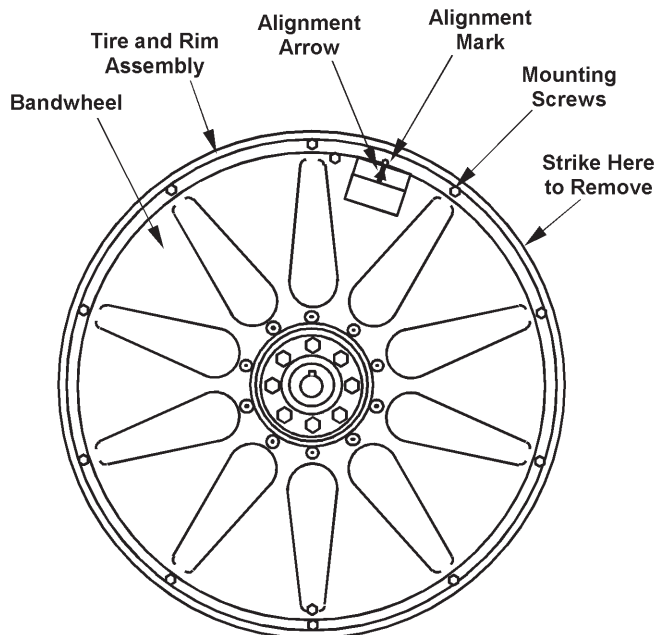
- This procedure requires the following items: **(a)** A hammer; **(b)** A length of steel bar with one end sharpened (such as a dull chisel); **(c)** A block of wood; **(d)** Five (5) tire installation kits (in extra parts box); **(e)** Wrenches for miscellaneous hardware. The bandwheel assembly may be removed from the machine if desired, but not necessary.



*Tire Installation Kit.*

### Tire Removal

- Remove the ten (10) cap screws, nuts and washers along the rim. Also note the **balancing arrow and mark (or two (2) arrows) on the wheel MUST be aligned** when reinstalled.



*Remove Rim and Tire From Bandwheel.*

- Facing the end of the bandwheel, hold the steel bar at a 45° angle to the face of the tire and approximately the horizontal center line of the bandwheel. Then: **(a)** Strike the bar with the hammer hard enough to move the tire from its seated position against the inside rim; **(b)** Rotate the bandwheel about 12 inches (304.8 mm) and repeat the procedure until the rim is removed from the bandwheel.

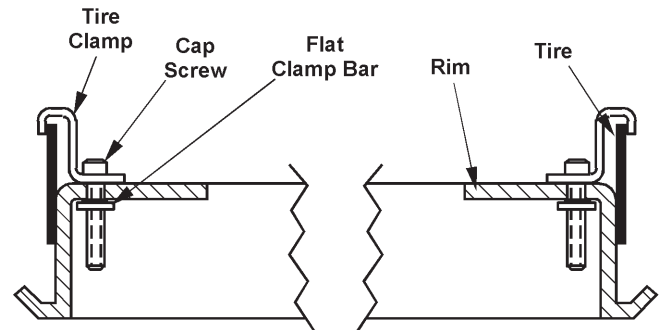


**DO NOT drive or hammer against the rim flange or bandwheel flange at any time.**

- Put the tire and rim in a vertical position. Next, with a block of wood held firmly against the inside web of the wheel rim, strike the block with the hammer at 12 inch (304.8 mm) intervals until the tire rim is separated from the tire.
- Wipe down the wheel rim with a cloth to remove all grease and oils.

### Tire Installation

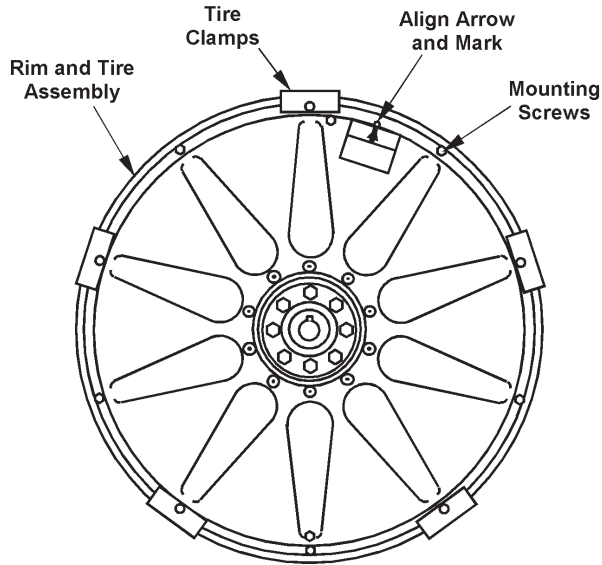
- Put the wheel rim, flange edge down, on a firm, flat surface (saw table makes a good surface). Then place the new tire on the rim so that it is uniformly seated on the starting radius of the rim.
- Mount the five (5) tire installation kits as follows: **(a)** Place the “hooked” end of the clamp over the new tire; **(b)** Slide the clamps so the hole lines up with alternate holes in the rim; **(c)** Socket cap screws are then threaded through the holes in the clamp, rim and then the flat clamp bar on the underside of the rim; **(d)** Turn the screws until the screw heads contacts the clamps; **(e)** Check to see that the tire is uniformly engaged on the rim as you continue to turn each cap screw two (2) turns until the tire is fully engaged onto the rim; **(f)** Remove all the clamps; **(g)** Using the block of wood and the hammer, tap the edge of the tire until the tire seated against the rim flange.



*Seating the New Tire onto the Rim.*

- The rim and tire assembly is now ready to be mounted onto the bandwheel. Next: **(a)** Place the rim and tire against the face of the wheel **making sure that the arrow align with the mark on the rim (they must be in register)**; **(b)** Hook the top edge of the tire over the wheel so that it will be temporarily self supporting; **(c)** Place the “hooked” end of the installation clamp over the rim; **(d)** Slide the clamps so the hole lines up with alternate holes in the rim and wheel; **(e)** Socket cap screws are then threaded through the holes in the clamp, rim and then the flat clamp bar on the opposite side of the wheel; **(f)** Repeat mounting the clamps at alternate holes around the wheel.

## BANDWHEEL TIRE REPLACEMENT (Sheet Metal Bandwheels) (Continued....)



Seating Rim onto the Bandwheel.

- After the five (5) clamps have been mounted gradually and uniformly, tighten the screws two (2) turns each until the rim and tire is seated against the wheel flange.
- Remove the tire installation clamps and then insert the ten (10) cap screws, nuts and washers.

## BANDWHEEL TIRE REPLACEMENT (Cast Aluminum Bandwheels)

- This procedure requires the following items: **(a)** A hammer; **(b)** A length of steel bar with one end sharpened or a dull chisel; **(c)** Large pliers; **(d)** Caulking gun; **(e)** An orbital sander; **(f)** Small brush; **(g)** Clamps; **(h)** Caulking gun conversion kit.
- Another person may be helpful for this procedure.
- Remove the bandwheel from the machine.

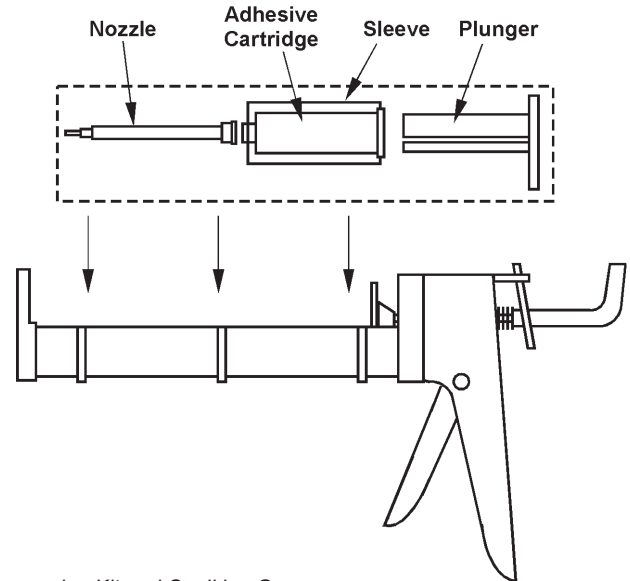
### Tire Removal

- Cut the tire and loosen the worn tire with a hammer and chisel or other flat tool.
- Grab the loosened tire with the pliers and pull the tire off the bandwheel.
- Using an orbital sander, carefully sand off any residue from the bandwheel.



**DO NOT** remove the center crown of the bandwheel or create "flat spots" with too much sanding in one area.

- Prepare the caulking gun conversion kit as follows: **(a)** Insert the adhesive cartridge, nose first, through the oval opening of the sleeve until the cartridge flange fits snugly against the end of the sleeve; **(b)** Place the two stem plunger in the back of the cartridge; **(c)** Remove the cap from the front end of the cartridge and replace with the nozzle; **(d)** Place the assembled kit into the caulking gun.

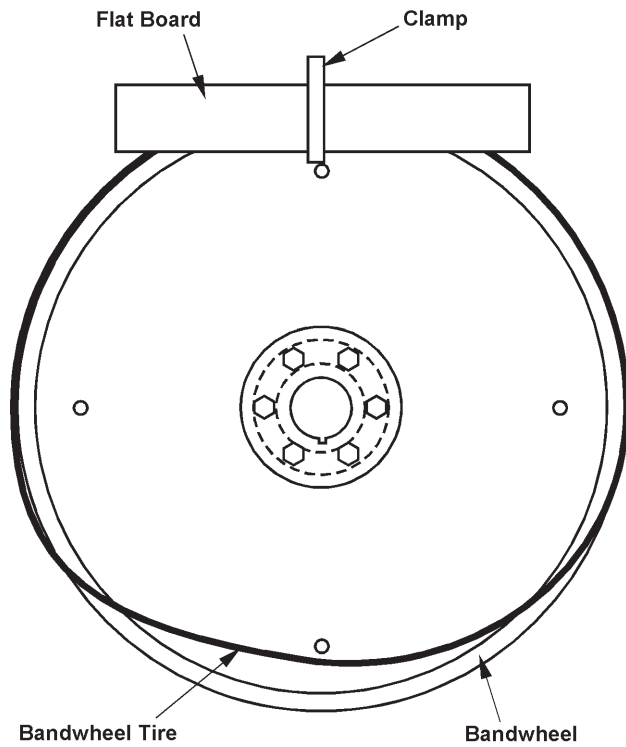


Conversion Kit and Caulking Gun.

### Tire Installation

- Lay the bandwheel flat onto a heavy table and clamp if necessary.
- With the caulking gun, spread the adhesive all the way around the inside of the tire and on the bandwheel rim using a brush. Spread evenly to the edges (100% coverage).
- Place the tire onto the bandwheel approximately half way around the rim positioning it on the center of the rim.

**BANDWHEEL TIRE REPLACEMENT (Sheet Metal Bandwheels) (Continued....)**



*Clamp the Bandwheel and Tire Do-ecurely.*

4. Clamp a flat board on top of the bandwheel to keep the glued portion of the tire in place. If necessary, clamp the bandwheel down to the table.
5. With two (2) screwdrivers, stretch the tire over the bandwheel always keeping one screwdriver stretching the tire as you move around the rim until the tire is placed. The other person can be centering the tire onto the rim as you go.
6. Before the adhesive sets, clean any excess from the both edges of the bandwheel with solvent.
7. Working time of the adhesive is approximately twenty (20) minutes and cure time is 24 hours.

# TROUBLE SHOOTING



Repair and adjustment procedures should be made by experienced maintenance personnel, or by a DoALL service representative. Reference to the machine's electrical and hydraulic schematics will be helpful.

## MACHINE WON'T START

1. Make sure the disconnect switch is in the "ON" position.
2. Reset the **All Stop** pushbutton (rotate clockwise).
3. Make sure the bandwheel doors are closed.
4. Check the fuses/circuit breakers for tripping or faulty operation.
5. Check the overload reset on the drive motor starter. Starting and stopping the machine a number of times in quick succession, or an overload, will trip the starter overload switch. Locate and correct the trouble, then push the reset on the overload switch.
6. Check the transformer for faulty operation.

## MACHINE VIBRATION

1. Check for unbalanced bandwheels.
2. Check for worn bandwheel tires.
3. Check for worn or unbalanced band drive belt.
4. Check for an incorrectly shimmed machine base.

## SAW BAND VIBRATION

1. Incorrect band speed is being used.
2. Choice of blade pitch is incorrect.
3. Stock is not being clamped firmly to the worktable and/or by optional vise jaws.
4. Check for worn or improperly adjusted saw guide inserts (If supplied).
5. Check for a worn saw guide back-up bearing.
6. Check for a loose post. Adjust the cover plate if necessary.
7. Check for a poor weld in the saw band.

8. Check for an incorrect saw band tension setting.

## SAW BAND IS CUTTING INACCURATELY

1. Check for worn blade teeth. Inserts that are too wide for the blade will damage the teeth set.
2. Check for scale on the stock.
3. The saw band may be too wide if a radius is being cut.
4. Check for incorrect saw band or insert alignment.
5. Incorrect band speed is being used.
6. Mist lubricant (if supplied) is not being applied evenly to both sides of the saw band.
7. Check for an incorrect saw band tension setting.
8. The upper saw guide is not located close enough to the stock.
9. Check for worn or loosely-adjusted saw guide inserts.

## PREMATURE BAND BREAKAGE

1. Saw band weld is defective.
2. Feed force and/or band tension is too high.
3. Saw guide inserts or rollers are not guiding the saw band properly.
4. Band pitch is too course, use finer pitch blade.
5. Band speed is too low.
6. Wrong coolant type is being used.

## EXCESSIVE INSERT AND BLADE WEAR

1. Inserts or saw guide rollers are adjusted too tightly on the saw band.
2. High band speed is causing friction (using roller saw guides may be advisable). Increase coolant volume to better lubricate the saw band.
3. The back-up bearing may need replacement.
4. Check for incorrect saw band tension setting.

## *TROUBLE SHOOTING (Continued....)*

### **PREMATURE BLADE TEETH DULLING**

1. The saw band is not being “broken” in on the first few cuts. Reduce the feeding pressure when making these cuts.
2. Band speed is too high (this causes abrasion).
3. Saw band pitch is too coarse.
4. Too light a feed pressure. Increase if necessary.
5. Coolant is not properly covering the saw band.
6. Check for faulty material such as heavy scale, inclusions, hard spots, etc.
7. Check for saw band vibration.
8. Check for chip welding, or for a chipped tooth lodged in the cut.
9. Check for incorrect saw band tension setting.
10. Inserts are incorrect for the width of blade being used. This allows the inserts to hit the set teeth (listen for clicking sounds during saw band operation).

### **SAW BAND SLIPS OFF BANDWHEEL**

1. The upper bandwheel is not aligned properly. The saw band needs to be tracked.
2. Check for worn bandwheel tires.
3. Check for slippery coolant, or excessive coolant volume.
4. Check for incorrect machine alignment.
5. Incorrect saw guide blocks are being used.
6. Check for incorrect saw band tension setting.

### **SURFACE FINISH ON WORK IS TOO ROUGH**

1. Check for a worn saw guide insert (adjust or replace if necessary).
2. Band speed is too low or feed force is too heavy.
3. Blade pitch is too coarse.
4. Check for saw band vibration.
5. Check for a poor weld in the saw band.

### **NO COOLANT FLOW (If Applicable)**

1. Make sure reservoir is full.
2. Check for a clogged coolant applicator nozzle.
3. Check for a clogged or kinked coolant hose.

### **SLUGGISH HYDRAULIC BRAKE OPERATION**

1. Check for low hydraulic system pressure or low reservoir level.
2. Check for air in the hydraulic system.
3. Check for faulty hydraulic pump operation.
4. Check for cold hydraulic oil.
5. Relief valve in hydraulic line is opened too far, dropping system pressure. See tag on the valve for correct pressure setting.
6. Brake linings are worn.
7. Check for oil on the brake discs.

### **LOW HYDRAULIC SYSTEM PRESSURE**

1. Check the relief valve for incorrect adjustment or faulty operation.
2. Hydraulic pump is worn or damaged.

### **HYDRAULIC BRAKES DRAG**

1. Check for air in the lines.
2. Brake pad return spring is broken or damaged.

### **HYDRAULIC BRAKES DON'T OPERATE**

1. Check for faulty brake solenoid valve.
2. Brake pad linings are worn.
3. Brake cylinder o-ring is worn or damaged.

### **TABLE FEED ROUGH AND ERRATIC**

1. Air is in the lines, bleed the lines.
2. Table feed cylinder is damaged or worn.
3. Linear bearing rails are damaged.



## *TROUBLE SHOOTING (Continued....)*

### **TABLE FEED PRESSURE TOO LOW**

1. Table feed cylinder is damaged or worn.
2. System pressure too low. Adjust pressure.
3. Table feed pressure control valve spring, ball or ball seat are damaged.
4. Check for leaks in the hydraulic lines and connections.
5. Check for hydraulic pump failure.

### **TABLE DOES NOT MOVE**

1. Check for obstructions.
2. Table feed cylinder is damaged or worn.
3. Make sure the hydraulic pump is on.

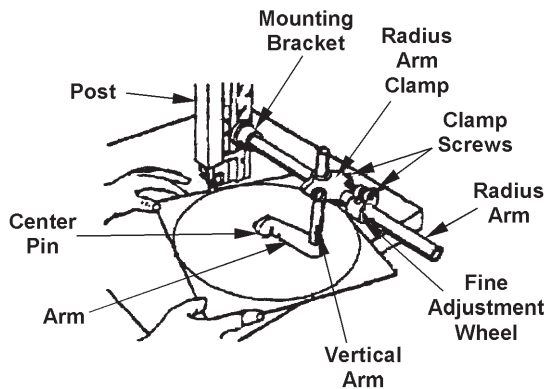
# ACCESSORIES



The following are accessories sometimes used during sawing operations. A DoALL sales representative can advise you about the current availability of any accessory.

## DISC CUTTER

1. This attachment can be used to cut internal or external circles from 3 to 36 inches (76.2 to 914.4 mm) in diameter. To set up the disc cutter:
  - Place flat washers under the mounting screws. Then:
    - (a) Bolt the mounting bracket to the post;
    - (b) Lower the post until the upper saw guide is approximately 3/8 inch (10 mm) above the worktable;
    - (c) Loosen the fine adjustment and arm clamp bolts;
    - (d) Move the center pin to the approximate distance of the radius to be cut;
    - (e) Tighten the fine adjustment clamp bolt.



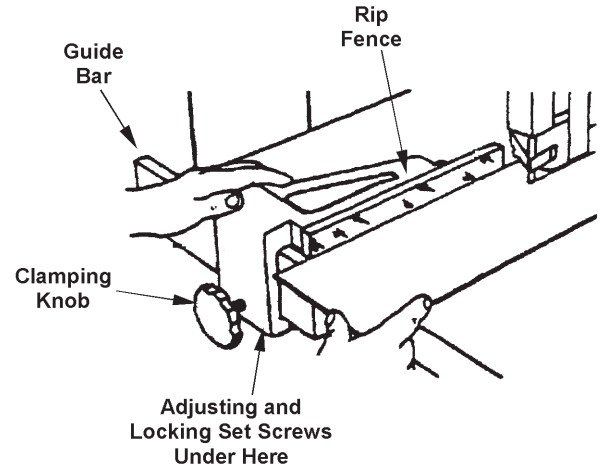
Disc Cutter.

- Position the center pin so that it is perpendicular to the saw band's cutting edge. To do so: (a) Place a square against the tip of a sawband tooth; (b) Loosen the vertical adjustment clamp bolt; (c) Line up the center pin with the square's blade edge; (d) Clamp the vertical adjustment clamp bolt.
- Make final radius adjustments with the fine adjustment wheel. Then: (a) tighten the arm and radius arm clamp bolts while making sure the center pin is square to the table; (b) Adjust the disc cutter for stock thickness by raising or lowering the post.

## RIP FENCE

1. Square this fixture during installation so that it is in line with the worktable sawing slot. When alignment is correct, secure the adjusting screws in place with the set screws under the the guide bar on the rip fence casting.

2. Before attempting a long cut, check to see that the saw band is not worn on one side. This will cause stock to wander relative to the rip fence guide bar.



Rip Fence.

## WORKLAMP

1. This worklamp illuminates the cutting area and areas nearby. It is turned "OFF" and "ON" with a switch on the lamp itself.
  - Some machines may have a selector switch located on the pushbutton control box on the front of the control box enclosure to turn the lamp "OFF" and "ON".

## MAGNIFIER

1. Magnifying the cutting area may prove helpful during delicate sawing procedures. This is done by placing a magnifying lens around the shade of the worklight.
2. A protective lens cover should be placed around the magnifier to prevent scratches when not being used.

## CHIP BLOWER

1. A nozzle delivers shop air to the sawing area. The operator can remove chips and debris from the sawing area by adjusting the flexible hose and nozzle.
2. Incoming air supply should be between 80 to 90 psi (5.5 to 6.2 bar or 5.6 to 6.3 kg/cm<sup>2</sup>) is required to operate this option.



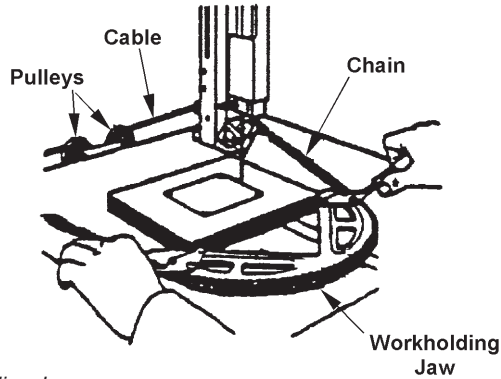
**DO NOT exceed 90 psi (6.2 bar or 6.3 kg/cm<sup>2</sup>) air pressure.**

## DBW-15 BUTTWELDER

1. Information covering blade welding, plus operation and maintenance of the optional DBW-15 Buttwelder (with flash grinder and blade shear, portable or machine mounted) are provided in a separate instruction manual included with the welder.

## WORKHOLDING JAW

1. The workholding jaw is used for off-hand and contour sawing. The operator can use this option to guide stock along prescribed contour layout lines.



Workholding Jaw.

2. The workholding jaws can also be used as a fixed angle jaw for manually guided contour sawing.



**Be sure to use the correct saw band width when cutting a radius.**

## SECONDARY TABLE

1. This fixed worktable, located to the left of the main worktable, measures approximately 19.00 by 19.00 inches (482.6 by 482.6 mm) and used for support of larger) workpieces.

## HYDRAULIC TABLES

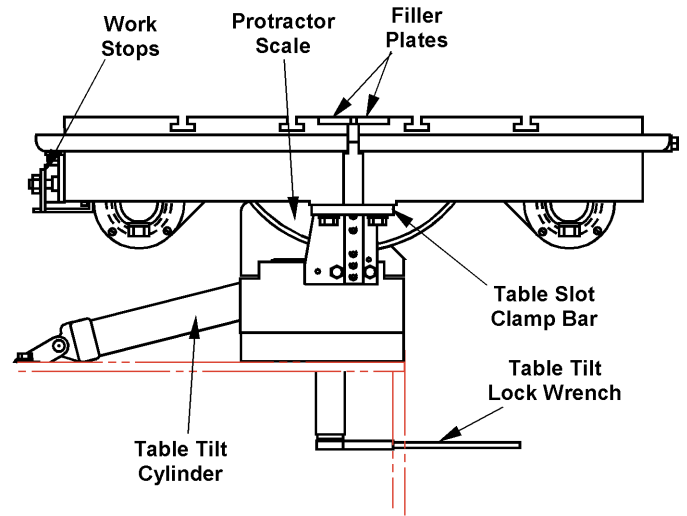
### Hydraulic Table

1. This optional hydraulic table measures 32 by 41 inches (812.8 by 1041.4 mm) with a table stroke of 16 inches (406.4 mm) and hydraulic actuated table tilt. It has a separate hydraulic system and controls in a remote console.



**This hydraulic table reduces work height approximately four (4) inches (101.6 mm).**

2. The worktable is drilled and tapped on the right side to attach accessory equipment. Its removable center plate can be replaced with optional plates for various options. The worktable also has two (2) 1/2 inch (12.7 mm) wide T-slots for tool and fixture mounting purposes.



Hydraulically Powered Worktable.

3. Two (2) adjustable work stops, located on the table's left side, limit table travel. The front stop controls the cut depth, the rear stop minimizes unnecessary table travel. They can be adjusted by loosening the lock nuts and slide the work stops to the desired position.
4. The worktable can be tilted up to 5° left and 45° right primarily for sawing compound angles. The amount of worktable tilt is indicated by a pointer and a trunnion-mounted calibrated scale.
5. To tilt the worktable: **(a)** Use the wrench provided to reach through the machine frame and under the worktable to loosen the tilt locknut; **(b)** Tilt the worktable manually or use the selector switch to tilt the table hydraulically until the pointer reaches desired angle shown on the scale; **(c)** Tighten the tilt locknut.

### Table Controls

1. These controls, located on a console attached to the front of the column, operate the hydraulic table:
  - **Table Pressure (Feed Force).** This dial permits the operator to vary workpiece pressure against the saw band. Feed force can be changed between 0 and 175 psi (0 and 12.1 bar or 0 and 12.3 kg/cm<sup>2</sup>).
  - **Table Feed.** This valve with "REVERSE", "STOP", "FEED" and "FORWARD" settings controls table directional movement. "FEED" position is for sawing, "REVERSE" and "FORWARD" positions are for table set-up and/or rapid table movement, and "STOP" stops table movement in either direction.



**The "FORWARD" setting is NOT used for cutting stock.**

## HYDRAULIC TABLES (Continued...)

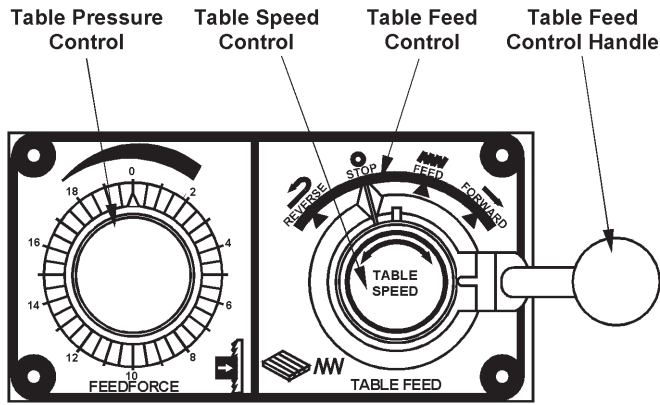


Table Controls.

- **Table Speed.** This dial located in the center of the **Table Feed** control regulates the table speed. Turn the dial **clockwise** to “increase” table feed speed, **counterclockwise** to “decrease” it. This operates in the “feed” position only.

### GLIDE TABLE

1. This non-tilting worktable option has a 25.39 by 32.63 inch (644.9 by 828.8 mm) worktable and table travel of 18.00 inches (457.2 mm). Load capacity is 250 pounds (113.4 kg).
2. The workpiece is securely clamped to the table. The operator then holds the handle in front of the table and manually pushes the table with the workpiece through the saw band. The handle also acts as a workstop if desired.



**DO NOT** force workpiece through the saw band.

3. A thumbscrew located in the lower right under the worktable locks the worktable in place to allow loading and unloading of stock. Loosen the thumbscrew completely for the worktable to move freely.
4. The handle must be removed for saw band changing.

### OPTIONAL SAW GUIDES

1. The following optional saw guides may be used to help increase productivity and economy.



**Information and availability of all DoALL saw bands and guides can be obtained from a DoALL sales representative.**

### Insert Type Saw Guides

1. Insert type saw guides are designed for lower range band speeds. See the “*Operation*” section of this manual for use and adjustments for these saw guides.

### Roller Type Saw Guides

1. Roller type saw guides are designed for high range band speeds. See the “*Operation*” section of this manual for use and adjustments for these saw guides.

### EXTRA WORK HEIGHT

1. The factory installed extra work height allows maximum cutting capacity up to 42 inches (1066.8 mm). Machines with this option have an auxiliary post support, plus a slightly different frame weldment, post guarding, and hydraulic post cylinder from those shown elsewhere in this manual.

### HYDRAULIC BAND TENSION

1. A factory installed cylinder mounted next to the upper bandwheel spindle applies the correct tension to the band and controlled by a selector switch on or near the control box enclosure.
2. This option eliminates the need to physically climb up on the machine. This especially helpful with machines of large work heights.



**Optional hydraulic band tension is factory set. DO NOT** adjust the handwheel if supplied!

### BAND LUBRICATOR

1. For machines without the mist lubricated saw guides, this option is for lubricating the saw band and sawing area during the sawing process.
2. See the instructions sent with the unit for information on operation and adjustments.

### DUST COLLECTOR

1. See the literature sent with the unit for information on installation, operation, maintenance and adjustments.

## **SAFETY EQUIPMENT**

1. Your machine may be equipped with safety devices that keep equipment and operating personnel protected. Contact your DoALL sales representative for information on any safety needs such as shrouding, guards, safety switches, etc.

## **MATERIAL HANDLING EQUIPMENT**

1. Special material handling equipment can enhanced the performance of your machine. Contact your DoALL sales representative for information on any material handling needs that could increase your productivity.